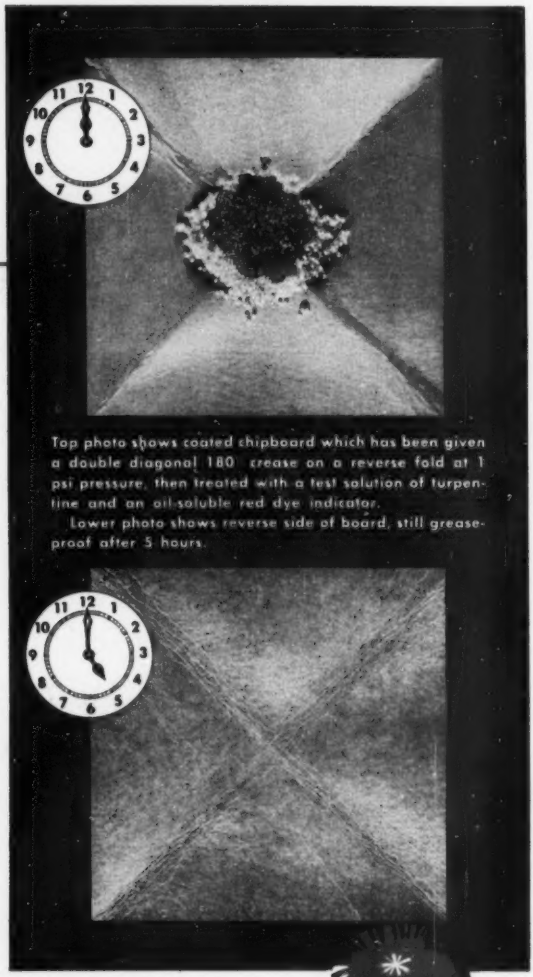
Modern packaging

Nominated for *Packaging's Hall of Fame* Story on Page 104

December 1952

still grease proof...



Top photo shows coated chipboard which has been given a double diagonal 180° crease on a reverse fold at 1 psi pressure, then treated with a test solution of turpentine and an oil-soluble red dye indicator.

Lower photo shows reverse side of board, still greaseproof after 5 hours.

COPOLYMER EMULSIONS of Polyvinyl Acetate give *better* greaseproof coatings — *at no extra cost!* Greaseproofness of these coatings exceeds that of rigid government specification JAN-B-121. They *last longer.* You get greater permanence than with presently used materials, better resistance and flexibility. They're cleaner looking.

You also get these advantages in the coating operation:

- **No fire hazard**
- **Equipment is easily cleaned**
- **Uniform viscosity permits easy machining**
- **Standard drying equipment can be used**

APPLICATIONS: Cartons for baked goods — doughnuts, rolls, cakes . . . Machine part wrappings . . . Paper plates . . . Meat packages . . . Greaseproof laminant for foil, glassine . . . Heat seal greaseproof coating — eliminates adhesive cost in making greaseproof pouches, cartons, etc.

For full information, clip and mail the coupon.

5 hours later

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National ADHESIVES

270 Madison Avenue, New York 16, N. Y.

I'D LIKE TO INCREASE GREASEPROOFNESS

Please send technical data on National's POLYVINYL ACETATE COPOLYMER EMULSIONS MP

Name_____ Title_____

Company_____

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City_____ Zone____ State_____

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CARTONS CREATE

IMPULSE BUYING

IN SELF-SERVICE MARKETS

Increase sales, profit and good will, with dynamic Gair Cartons. More and more, Impulse Buying of a product in Self-Service markets depends on the attractiveness and selling impact of the package.

Safeguard the success of your new package by placing your packaging problem with the Gair organization. Yes! Gair has been designing and manufacturing folding cartons with a powerful "Sales Impact" for almost a century. For complete information

Write for Brochure on Gair Cartons.

GAIR

PAPERBOARD
FOLDING CARTONS
SHIPPING CONTAINERS

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK • TORONTO

Modern packaging

Vol. 26 No. 4 December 1952

General

Boom in aerosols 91
It's time to take another look at this paragon of convenience that is turning competition topsy-turvy in a dozen different fields.

A *folding* set up box? 98
Bloomingdale's smartly tapered, nesting container is partly both, and points to new economies in boxing generally.

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Kidmetics pioneers a new method of bottle decoration using a modified version of a conventional paper-labeling machine.

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Your product—or Ours—

there is no endorsement like a REPEAT ORDER!

We are proud of this list of some of the "BLUE BOOK" manufacturers of cartoned products who have repeatedly purchased

JONES CARTONERS

and in many cases are using dozens of these machines.

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American Crayon Company
American Safety Razor Corp.
Angier Chemical Company
Ansco Division of General Aniline & Film Corporation
The Arner Company
Avon Allied Products, Inc.
Walter Baker Chocolate & Cocoa Div. General Foods Corporation
The Barbasol Company
The Bayer Company Division of Sterling Drug Inc.
Bernardin Bottle Cap Co., Inc.
The Best Foods, Inc.
Block Drug Company
Brillo Manufacturing Company, Inc.
Bristol-Myers Company
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The Centaur-Caldwell Division of Sterling Drug Inc.
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Nicholas Proprietary Ltd. (*Australia*)
Sterling Drug, Mfg. Ltd. (*Canada*)

The eminence and notable success of these concerns, and the wide variety of their cartoned products, suggests the wisdom of bringing your cartoning problems to Jones.

JONES Constant Motion CARTONERS
FULLY AUTOMATIC

Feed and open cartons; insert single or multiple loads; glue or tuck flaps of cartons – airplane or reverse tuck. Fold and insert leaflets, booklets, corrugated liners; print or stencil code; are convertible to different sizes of cartons and loads.

JONES "CMV" CARTONERS

Feed and open cartons – reverse, straight or airplane type; tuck bottom flaps; carry cartons upright in *constant motion* past loading stations for manual insertion of load; tuck top flaps. CMV Cartoners available to handle cartons from 4" x 4" x 9" to ¾" x ½" x 2¼".

P. O. BOX 2055
CINCINNATI, OHIO

R. A. & COMPANY, INC.

Modern packaging

EDITORIAL

Sharing the knowledge

WHEN THIS APPEARS, the 11 members of the French Packaging Team who for the last six weeks have been touring this country will be back at their respective jobs—filled, we believe, with a new understanding of what it is that makes American packaging progress the envy of the world.

We had the pleasure of being hosts to the Frenchmen the day after they arrived in this country. We sat around a big conference table, here at MODERN PACKAGING's headquarters, and they fired questions at us. Strangely enough, the questions had little to do with packaging trends and developments in this country; they all wanted to know about MODERN PACKAGING itself: How in the world did we obtain our detailed information from package users about developments which, it seemed to the Frenchmen, ought to be closely held secrets?

They seemed to visualize some vast underground organization, prowling around the country, prying out information by stealth. When we told them that packaging users usually come to us, and almost without exception are proud and happy to share their experiences with others through the pages of our magazine, they were dumbfounded.

A little later the Frenchmen sat through the three-day Forum of our Packaging Institute. Underneath their translation headphones, we watched their eyes widen in amazement. "But," said one of them to us, "these are packagers, telling other packagers everything they know! Over there, at our Institute meetings, we can get as speakers only—what you call?—peddlers. People who want to sell—not tell."

There is a lesson here. Dating, perhaps, from the time when the first settlers joined together to stand off the Indians, it has been an American tradition to share. Business men brought up in this tradition know that to get help they must give help. They know that for every idea they contribute they stand to get 10 in return—and that without contributions the common fund of knowledge on which they draw so profitably could not exist.

That accounts for magazines like MODERN PACKAGING and organizations like the Packaging Institute. And, come to think of it, maybe it's the only secret we Americans have.

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with sharper sales focus...

for wider markets!

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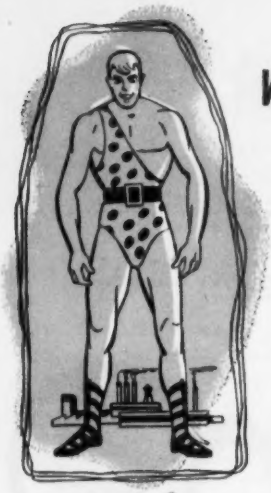


Whether your company is

...A GIANT

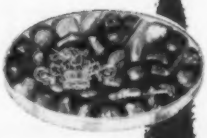
or

A GROWING BABY

Because Central States develops packaging for the largest manufacturers and retailers in the country, we have facilities to provide outstanding packaging for your account . . . whether it's large or small.

Many of the "giants" we supply today were "growing babies" when we started supplying them 25 years ago. Imaginative packaging created by us for your individual needs will increase sales . . . cut costs . . . give better protection.

Stock 3-color Ham Bag† with individual imprint



Embossed acetate SHOWBOX*

Plastic bag with printed header

CENCORAP* plastic-coated kraft pouch

Polyethylene liner for drums

Printed polyethylene SHOWBAG*

Stock newspaper home delivery bag with imprint

Call our local representative or write today

*T. M.
†Patented

Every industry profits from packaging by . . .

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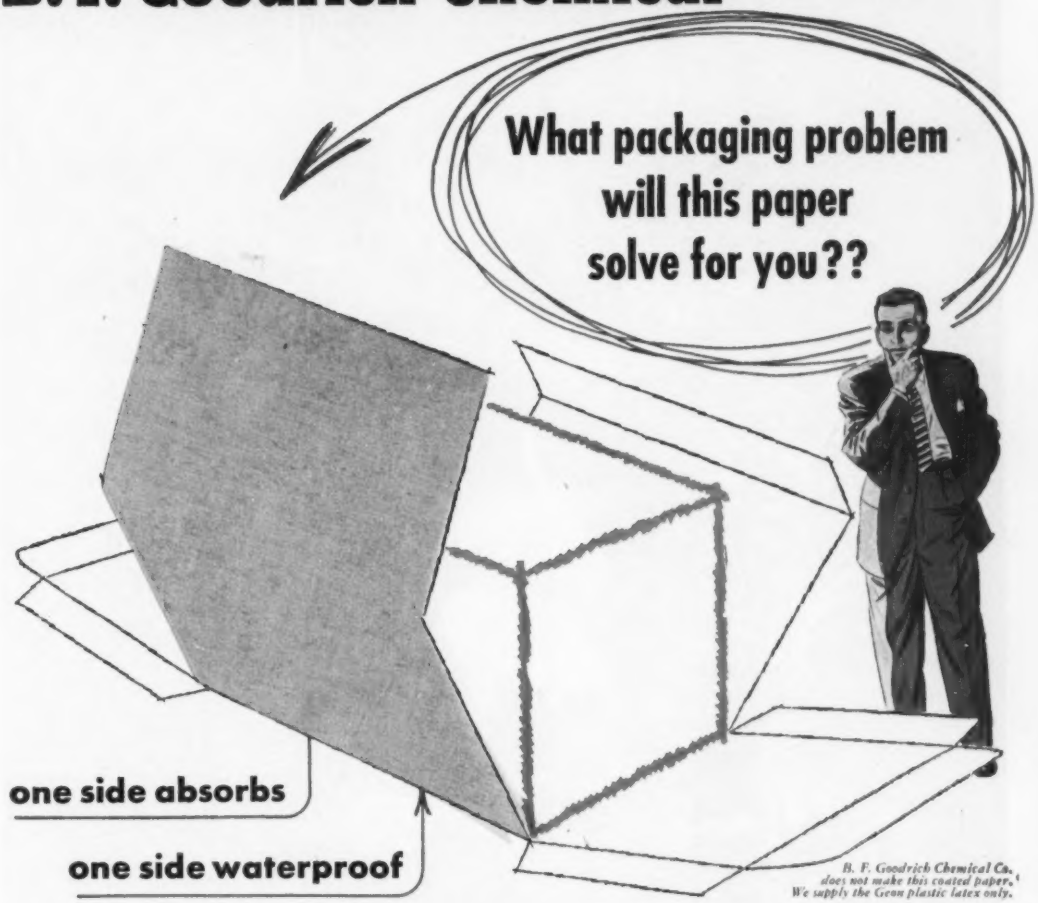
Another new development using

B. F. Goodrich Chemical *raw materials*



B. F. Goodrich Chemical Co. does not make this coated paper. We supply the Geon plastic latex only.

THERE is a packaging need, probably, crying aloud for a paper* such as this. Examine the sample attached. Test its waterproof quality and its absorbency, and ask yourself what packaging problem it will solve.

This new paper, originally developed for use as a hospital sheeting between patient and mattress, provides a complete, flexible, waterproof barrier on one side. The other side absorbs. It is absolutely odorless, can be sterilized, and the cost is reasonable.

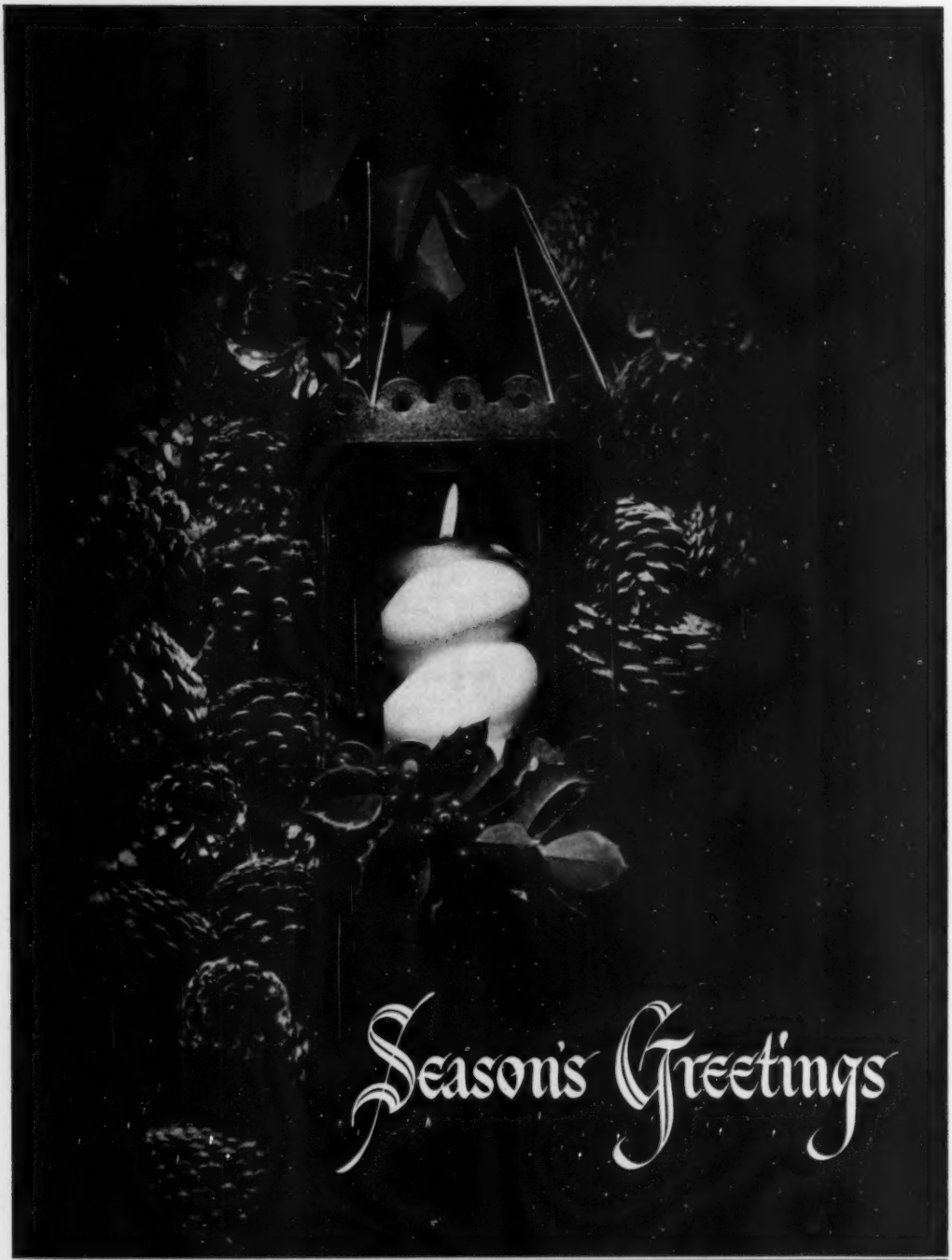
Credit the waterproof advantage to the fact that it is coated with Geon plastic latex. That is only one of the advantages that Geon brings to this paper. It also resists cold, aging, weather and wear, oil, grease, acids and alkalies.

Geon materials are used as coatings, calendered or cast into sheet and film. The typical example shown here may give you ideas for package improvements, or in developing new uses. We make no finished products from any of our raw materials. But we are always glad to give you helpful, technical advice. For information, please write Dept. GL-12, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

**Patent applied for*

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable.

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON organic colors



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Colgate and many other leading manufacturers package their fine products in **ALCOA** Aluminum Tubes...

ALUMINUM COMPANY OF AMERICA • 1752-M GULF BUILDING • PITTSBURGH 19, PA.

this is the "standard" for Christmas

Jolly Saint Nick with his bulging bag of gifts for young and old . . . the symbol of joy and happiness during this meaningful season.

this is the "standard" for package printing

Peppermint sticks get "dolled up" for sales in this printed cellophane bag by Standard. Each stick is individually wrapped, too, for added protection and appeal.

Here is another Standard package that is paying off at point of purchase.

COLOR-CRAFT

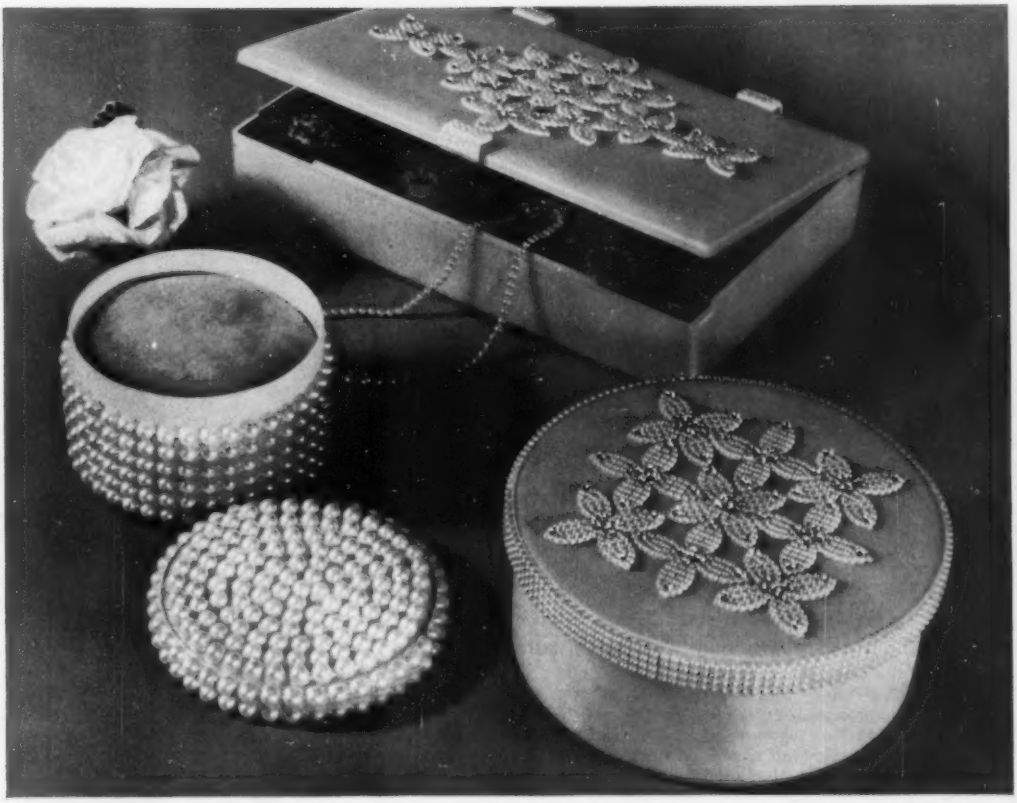
Standard

printing company

Subsidiary of Shellmar Products Corporation

COLUMBUS, GEORGIA

PRINTERS OF CELLOPHANE, ACETATE, AND GLASSINE SINCE 1930



Boudoir Beauty in TRI-STATE RIGID PLASTIC BOXES

Four months ago, THE MARK PLANTS of New York City had an idea. Today it is a profitable reality... thanks to the use of Tri-State Rigid Plastic Boxes.

The Mark Plants chose 3 of our stock boxes, tastefully colored them in blue, pink and white... hand decorated with pearl and rhinestone designs to give milady a beautiful selection of face powder, bath powder and jewelry boxes... boxes so new and different that stores have re-ordered 1000%.

If you have an idea which you think can be made profitable through the use of rigid plastic boxes, please call on us. We will either have a box in stock or will develop one to fit your requirements.

Before the Mark Plants' treatment, Tri-State crystal-clear, rigid plastic stock boxes, left to right . . .
No. 72—Diam: 4"x2½" deep
No. 600—6½"x9¾"x2"
No. 180—Diam: 6"x2½" deep

The Best Rigid Plastic Boxes are Injection Molded by

TRI-STATE PLASTIC MOLDING CO., Inc.
HENDERSON 6, KENTUCKY

NEW YORK: 12 E. 41st St., MUrray Hill 3-6572 **CHICAGO:** 176 W. Adams St., FRanklin 2-7292 **DETROIT:** 4697 Lakewood, YAlley 2-9761

The Secret of Sugar-Coated Sales!

Reproduced in miniature above, with tip-on of its color illustration at right, is a *consumer* advertisement appearing in several national magazines. In consumer terms it tells the dramatic sales-success story of Sugar-Coated Cereals... and one of the important secrets of this success.

The secret is, of course, Reynolds Aluminum Foil. To quote from the ad:

"Puffed Sugar-Coated Cereals must have absolute protection against moisture... to keep the kernels from sticking together... to assure that crisp crunchiness you like. As a Reyseal* bag inside the carton, or as an over-wrap, Reynolds Aluminum Foil is the one material that cereal manufacturers have found best for this protection."

Through magazine advertising, as well as radio and television, Reynolds continually promotes *to consumers* the advantages of aluminum foil packaging... leading the way in an educational program that benefits all manufacturers of foil-packaged products. This advertising, plus the great home demonstration by Reynolds Wrap, makes housewives acutely and increasingly aware of foil packaging... makes them more than ever susceptible to its supreme eye appeal, because they are convinced of its supreme protection.

Let us show you what Reynolds Aluminum Foil can do for your product. Call the nearest Reynolds Sales Office or Reynolds Metals Company, General Sales Office, Louisville 1, Ky.

*Reg. U. S. Pat. Off.

The "kitchen engineer", with her Reynolds Wrap, knows *and demands* aluminum foil packaging!

REYNOLDS ALUMINUM

Kellogg's
SUGAR
CORN
POPS
"MM-EE!

GEAR GREASE • KENDALL OUTBOARD GEAR GREASE • KENDALL OUTBOARD GEAR GREASE • KENDALL

LET

WIRZ

HELP SOLVE YOUR TUBE DEVELOPMENT PROBLEMS

This Kendall grease-tip tube for outboard motor lubrication is another example of how the Wirz Packaging Laboratory helps develop packaging for new product uses. From this laboratory come new markets and new profits for your product.

ESTABLISHED 1836

A. H. WIRZ Inc.

Fourth & Cole Sts.
Chester, Pa.

New York 17, N. Y. 50 E. 42nd St. | Chicago 4, Ill. 80 E. Jackson Blvd. | Memphis 2, Tenn. Wurzburg Bros. | Los Angeles 48, Calif. 435 S. La Cienega Blvd. | Havana, Cuba Roberto Ortiz & Son

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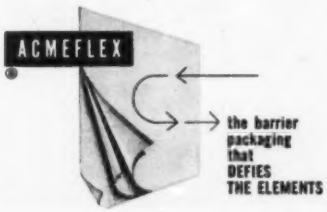
Collapsible Metal Tubes • Lacquer Linings • Wax Linings • Westite Closures • Soft Metal Tubing • Household Can Spouts • Applicator Pipes • Compression-Injection Molding

same product... same customer

ACMEFLEX® makes the difference!

Acmeflex is science's new invention for the preservation of your product. Acmeflex is more than just a protective packaging material. It is a barrier between your product and the elements of the outside world . . . the elements that would change the taste, fragrance, freshness, dryness, or just plain goodness of your product. Acmeflex can be engineered to the specific requirements of your product, and is designed for high speed packaging equipment. Samples to solve your own problem are available without obligation. Write Dept. MP1.



ACME BACKING CORP.
Brooklyn 6, New York

Where m is the mass of the moving body, v its velocity along the circumference, and r the radius of the curved path.

A body revolving in a curved path exerts a force, called centrifugal force, on the arm or cord that restrains it from moving in a straight line.

One of the best-known applications of centrifugal force is the cream separator with rapidly rotating bowl which throws heavier milk ingredients to the outer radius away from the lighter weight cream.

KVP

PAPERS for the FOOD INDUSTRY

THE FOOD INDUSTRY is notable for its progress. Paper has helped. Paper—the proper kind—*protects* food products. Paper—properly designed—*sells* food products.

KVP specializes in both. KVP chemists and engineers give papers what it takes to keep food products clean and wholesome, and KVP artists and printers give them what it takes to attract buyers.

KVP

KALAMAZOO VEGETABLE PARCHMENT CO.

PARCHMENT, MICHIGAN

ASSOCIATED COMPANIES:

KALAMAZOO VEGETABLE PARCHMENT CO.
DEVON, PENNSYLVANIA

KVP COMPANY OF TEXAS
HOUSTON, TEXAS

HARVEY PAPER PRODUCTS CO.
STURGIS, MICHIGAN

IN CANADA:

THE KVP COMPANY LIMITED
ESPANOLA, ONTARIO

APPLEFORD PAPER PRODUCTS LIMITED
HAMILTON, ONTARIO
MONTREAL, QUEBEC

INDUSTRIES SERVED

BAKING
Bread — Cracker
Cereal

MEAT
Packing — Locker
Retail

DAIRY
Butter — Cream — Cheese
Ice Cream — Milk

FISH • FRUIT • FROZEN FOODS
POULTRY • SHORTENING • VEGETABLE

An Ever Growing Range for Your Ever Growing Uses

MILLS PLASTIC® Bottles

GALLON SIZE ➡
"CYLINDER"

More and more firms are discovering that MILLSPLASTIC unbreakable bottles serve their needs far better than any other bottles. MILLSPLASTIC leakproof containers now meet daily use in packages for cosmetics, acids, photosensitive chemicals, hygroscopic materials. Our growing line of standard bottles and expanding scope of custom work is the direct answer to these widening needs—yours among them.

STANDARD BOTTLES—Our history-making gallon sized bottle and precision engineered closure are the largest in our standard line which also includes Mills "Cylinder" in 2-4-6-8 ounces; Mills "Oblong" in 2-4 ounces. Both styles are available in natural Polyethylene or your preferred color. Standard atomizers, closures and tubing are also available.

CUSTOM BOTTLES—We are currently meeting specialized needs by creating custom shaped bottles in an unprecedented variety of styles, sizes, colors. We also make special atomizers and closures.

Let us show you today how and why
MILLSPLASTIC *bottles can best fill your needs*

ELMER E. MILLS CORPORATION
2930 North Ashland Avenue • Chicago 13, Illinois

Sales Agent: W. Braun & Company
Chicago: 500 N. Canal New York: 715 Fifth Avenue
Detroit: 139 W. Maple, Birmingham, Michigan

Mfd. under patents 2,515,093—2,579,390—2,579,399. Other pats. pend.

Cross Swing Sifters

NOW WITH *NEW* PLASTIC SIFTERS . . .

Cross Swing Sifters - - - today's modern container - - - affords your package an all-round versatility which makes it stand out in competition and step out with greater sales for you.

Cross Swing Sifters are being used for cosmetics, foods, drugs, pharmaceuticals or any other product that can be dispensed through a shaker or sifter . . . . Can we serve you?

Samplers

Cross round miniatures, an exact replica of your full size container, provides the answer for the perfect sample package. Both full size and samplers can be filled with any standard filling equipment.

Ask for a representative to call, or write for details and samples.

CROSS PAPER PRODUCTS CORP.

4377 Bronx Boulevard New York 66, New York

DESIGNERS • CREATORS • MANUFACTURERS OF INDIVIDUALIZED ROUND AND OVAL PACKAGES

Tamperproof protection and a sanitary seal in one operation result from PLIOLITE NR *coatings on these milk bottle caps. Photo courtesy American Seal-Kap Corp., Long Island City, N. Y.*

USING PLIOLITE NR, a cyclized derivative of natural rubber developed by Goodyear, the makers of these milk bottle closures are able to offer users single operation closure. That's because paper coatings of PLIOLITE NR are readily sealed in the 275°-300° F. range to give a high-strength bond, and a strong, tamperproof seal.

PLIOLITE NR offers other outstanding advantages as well, including:

Excellent resistance to water vapor transmission • Excellent anchorage • Good gloss • Good nonblocking characteristics • Low air permeability • Excellent crease resistance • Low density • Savings through use of a single solvent.

Ask your Goodyear Chemical Division representative for further details today, or write for sample for evaluation and full information to:

Goodyear, Chemical Division, Akron 16, Ohio

Chemigum, Pliobond, Pliolite, Pliovic–T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

CHEMICAL
GOODYEAR
DIVISION

We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday — ABC Network

Use-Proved Products — CHEMIGUM · PLIOBOND · PLIOLITE · PLIOVIC · WING-CHEMICALS — The Finest Chemicals for Industry

"Quality Built In"

A complete line of laminated papers with the same high standard of quality that has distinguished Cromwell products for 33 years. Now Cromwell laminates finest Kraft to finest Kraft in a wide variety of papers for thousands of industrial, agricultural, construction and packaging uses—with the most consistent uniformity in the industry—made possible by unique new equipment specially designed by Cromwell's own research and engineering departments.

CROMWELL FLEX-FIBRE

FOR: Waterproofness • Strength • Flexibility • Puncture and tear resistance • Conforming Packaging . . . controlled flexibility; unusual strength. Acid, mold and wickproof glass fibres are swirled into the waterproof laminant, and the sheet made flexible *after* reinforcing and lamination.

CROMWELL FLEX-LAM

FOR: Waterproofness • Flexibility • Conforming Packaging . . . Similar to Flex-Fibre, but without glass fibre reinforcement. An ideal material where ordinary strength is indicated.

CROMWELL FIBRE-KRAFT

FOR: Waterproofness • Strength • Puncture and tear resistance . . . a flat, non-flexible laminated sheet reinforced by swirling acid, mold and wickproof glass fibres into the waterproof laminant.

CROMWELL FERRO-PAK

FOR: Corrosion Prevention . . . a Volatile Corrosion Inhibitor paper. Invisible gases emanating from the paper protect ferrous metal parts from corrosion—even when those metal parts are not in actual contact with the Inhibitor.

Cromwell embosses instead of creping—and embosses *after* lamination . . .

Creping breaks down Kraft fibres and leaves weak spots through the sheet. Embossing does not. Cromwell embossing renders the Kraft just flexible enough to provide maximum tear and puncture resistance and a comforming wrap—but *without* weakening the Kraft! Post-laminant embossing ensures a perfectly uniform sheet by providing a perfectly uniform lamination.

CROMWELL PAPER COMPANY
4801 S. Whipple Street, Chicago 32, Illinois
Factories at Chicago and Jersey City, New Jersey

Cromwell laminated papers are available in rolls, sheets, bags

free samples . . .
Write for Cromwell's new folder of Laminated Paper Samples and completely detailed descriptions of each.

"TARANGER gives us small and medium size users unexcelled service on aluminum foil"

plain • printed • laminated • converted

Word is rapidly getting around that nobody gives better service, better deliveries, better prices than Taranger—especially when the customer is a consumer of limited quantities of aluminum foil.

Taranger stresses service—your requirements for fancy foil, plain foil, and printed candy and food wraps are handled promptly, courteously and efficiently. With Taranger there is no such thing as a "second-rate customer."

DELIVERY Delivery is often *weeks* earlier from Taranger—far faster than customers get elsewhere.

SMALL RUNS Order as little as five reams without paying excessive penalties. Special designs printed to order.

FORMS Rolls. Sheets. Bags. Envelopes. Printed or plain. Any gauge.

DECORATION Choose from thousands of Taranger designs, printed in 1 to 4 colors, plus an amazing number of embossing patterns.

SPECIAL FINISHES Varnished. Laminated with cellophane or glassine. Special pattern embossing.

EXCLUSIVES Even where quantities are small, Taranger can guarantee exclusive use of any design and color combination.

Other Aluminum Products

In addition to foil in all its forms, Taranger is a top source for collapsible aluminum tubes (coated, lined and decorated to order; all sizes and styles) and rigid aluminum impact extruded packages (cylinders, tubes and bottles). Details on request.

E. Taranger, inc.
441 Lexington Avenue New York 17, N.Y.

IT'S TARANGER . . . FOR SERVICE . . . IN ALUMINUM

You too can add product sales appeal

with MEHL

Plastic Packaging

PREMIUM PACKAGING

. . . add a world of extra "punch" to your product . . . invest in sales-making Mehl premium packaging.

FOOD PACKAGING AND PRE-PACKAGING

. . . give your product a personality—it looks better, is protected better and sells faster in Mehl plastic bags—all sizes and styles—plastic printing acclaimed finest ever offered.

SEE-SAFE PLASTIC STORAGE AND TRAVEL BAGS

. . . excellent items for clothing manufacturers, department stores, dress shops, cleaners. Stock or special designs to meet your requirements.

MILITARY PACKAGING

. . . widest range of protective barrier materials . . . meeting all government specifications . . . plus expert packaging advice.

CHEMICAL AND INDUSTRIAL PACKAGING

. . . new *circular bottom* polyethylene drum liners . . . plus a complete line of plastic, cellophane and other flexible packaging items.

SPECIALTIES

. . . whatever your product, there's probably a MEHL bag to fit your needs . . . give your product a "new look."

Let a Mehl bag help your product. *It's in the bag—"safe and you can see it."* Samples and complete information available.

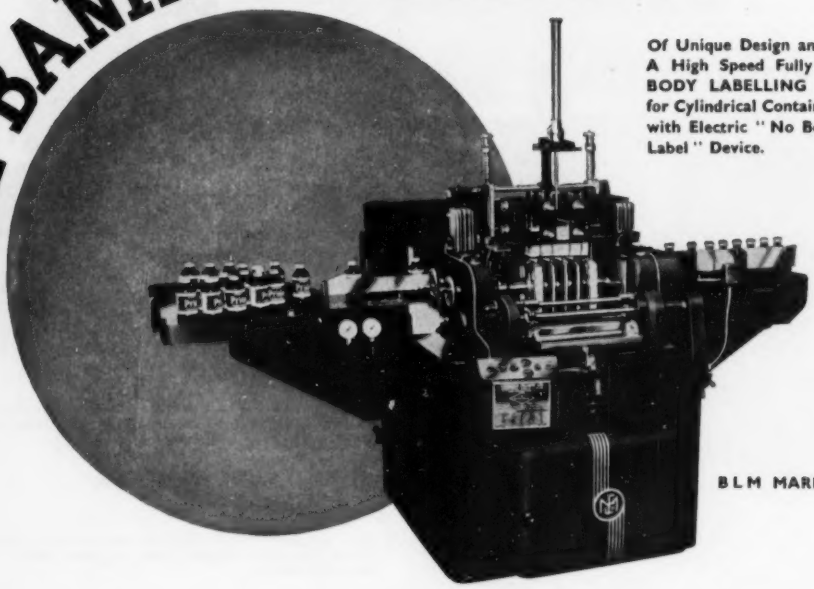
MEHL

Division of Sydney-Thomas Corporation

MANUFACTURING COMPANY

2073 Reading Road • Cincinnati 2, Ohio

THE 'BANKS' LABELLER



Of Unique Design and Principle. A High Speed Fully Automatic BODY LABELLING MACHINE for Cylindrical Containers. Fitted with Electric "No Bottle — No Label" Device.

B L M MARK 3.

Precision labelling from 2,400—10,200 units per hour using one label stack only.

The "Banks" Labeller is simple to operate, occupies very little space, and positions the labels positively, accurately, and without any trace of surplus gum beyond the edges of the label, irrespective of the label shape or size.

Change from one size of container to another is obtained in a matter of seconds. Cleaning down takes only a few minutes.

Manufactured in 6 models suitable for use in Breweries, Mineral Water, Food, Cosmetic and Chemical Factories, etc.

Each model will label all round or part, up to the label width capacity of the machine, from ½" up to 12" wide.

B.L.M. Mark 1 will apply a label 3" wide x 4" deep.
B.L.M. Mark 2 will apply a label 4" wide x 6" deep.
B.L.M. Mark 3 will apply a label 12" wide x 6" deep.
All round or back and front or series labels within this area.

Please write for descriptive literature

Each of these models will accept diameters from 1¼" to 4½".

Models B.L.M. Mark 1.S or 2.S will accept diameters down to ⅜".

Over 1,000 machines are at work or on order for THIRTY Countries and 180 Towns and Cities in Great Britain.

***Manufactured by* Morgan Fairest Ltd. Sheffield. England**

fmc

STOKES & SMITH Co

PACKAGING MACHINERY **PAPER BOX MACHINERY**

Frankfort • Philadelphia 24, U.S.A.

Subsidiary of Food Machinery and Chemical Corporation

Holiday Greetings

HAZEL-ATLAS GLASS COMPANY

Concinnity...

"Skillfully put together — mutual adaptation of parts — elegance"

Apotheosis...

"Of consummate quality and incomparability — implying supremacy" . . . (Webster's Synonyms)

Provenience...

"The origin or source" — according to Webster

These unusual words, whose definitions specifically imply the highest quality of workmanship — originality of design — and ingenious combining of packaging materials, aptly and truly describe —

The "Right Package" for YOUR product!! Whether it be a folding carton — a hand made or machine made setup box — a clear acetate, or combination of acetate and box board — or a counter display box — the many years of Warnercraft's experience, combined with the most modern high-speed box making equipment gives you the "Right Package."

THE WARNER BROTHERS COMPANY

BRIDGEPORT 1, CONNECTICUT

New York Sales Office: 200 Madison Avenue, New York 16, N. Y.

FOLDING CARTONS—HAND MADE OR MACHINE MADE SETUP BOXES
TRANSPARENT ACETATE BOXES—COUNTER DISPLAY BOXES

Custom Packaging

HELPS PUT SALES "IN THE BAG!"

MOST men like to shop *fast!* That was always true. It's more true now than ever in these days of pre-sold brands, standard values, guaranteed satisfaction, and a growing degree of self-service in many stores.

All the *more* reason for package designs, package printing, and package *boxboard* that helps good design and printing put across a preference message at a glance! Knowing this, leading manufacturers are quick to appreciate the peerless quality of Ridgelo clay-coated, custom-made boxboard . . . for men's toiletries, clothing accessories, sporting goods, et cetera.

Ridgelo
CLAY COATED
REG. U.S. PAT. OFF.
BOXBOARDS

Custom Made

MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

Different . . . better . . . in so many ways. More uniform, brighter and whiter, easier and cheaper to print. And—available in a wide variety of finishes and colors for any reproduction method.

Representatives
H. B. Royce, Detroit
Philip Rudolph & Son, Inc., Philadelphia
A. E. Kellogg, St. Louis
Norman A. Buist, Los Angeles

Carter's FAMOUS "FILLING STATIONS" are filled, capped and labeled by PNEUMATIC

WHEN your pen runs dry, chances are better than even that you'll give it a good long drink from a bottle of Carter's. The big call for Carter's leaves no doubt the Carter people know how to make a very fine ink.

They know the economical way to bottle it, too. Carter's, like other leading manufacturers of packaged goods — wet or dry — use Pneumatic machines. Production engineers credit advanced design, painstaking precision machining and expert installation for the unfailing high efficiency and "lower cost per container" performance of Pneumatic equipment. You, too, can count on Pneumatic to meet the most exacting requirements in your plant, day in and day out, for many, many years.

PNEUMATIC SCALE CORP., LTD., 82 Newport Avenue, Quincy 71, Mass. *Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.*

Carter's various bottle shapes and sizes are automatically filled, capped and labeled on Pneumatic machines, shown above in operation at Cambridge, Mass. Cartoning and case packing operations are completed by hand.

PNEUMATIC *Packaging and Bottling Equipment*

PRODUCT IDENTIFICATION

plus safe arrival with Gummed Products'

PRINTED TAPE

Every package will be a prestige advertisement for your goods when neatly, and *safely*, sealed with Sterling Supreme or Trojan Imperial Printed Gummed Tape, containing your name, trademark or selling message. Ultra-modern printing equipment is ready to produce tape for you, like the samples shown here, in quantities of 100 to 10,000, or more rolls, in one or two colors.

So, for package-prestige and trouble-free service get in touch with the Paper Merchant in your community who handles Sterling Supreme, the super-standard gummed tape, or Trojan Imperial, the standard gummed tape.

The Gummed Products Company

Offices • *TROY, OHIO* • Mills

Atlanta • Chicago • Cincinnati • Cleveland • Los Angeles
New York • Philadelphia • San Francisco • St. Louis

the siebenthaler company • landscape nurseries

APEX MACHINE AND TOOL COMPANY

MacGregor THE GREATEST NAME IN GOLF

"perfection in plastics"
STANDARD MOLDED PRODUCTS CORPORATION

Thoughts from Canco City

You are looking at a mighty unusual town.

It is Canco City—a far-flung American "workshop" of container plants between the Atlantic and Pacific, grouped together by an artist's magic hand.

Canco City is a city of 35,000 citizens—a community of people with diversified skills, hobbies and interests; just like you and the neighbors in your home town. These people are bound together with a common purpose: Planning and making better containers for your industry.

Now, at the close of the year, they pause to reflect upon the work they have done for you and to trust in all sincerity that the job for you has been the finest in the world.

Everyone in Canco City takes this opportunity to extend Season's Greetings to you . . . and everyone hopes that the New Year will bring to you and your community both prosperity and peace of mind.

AMERICAN CAN COMPANY

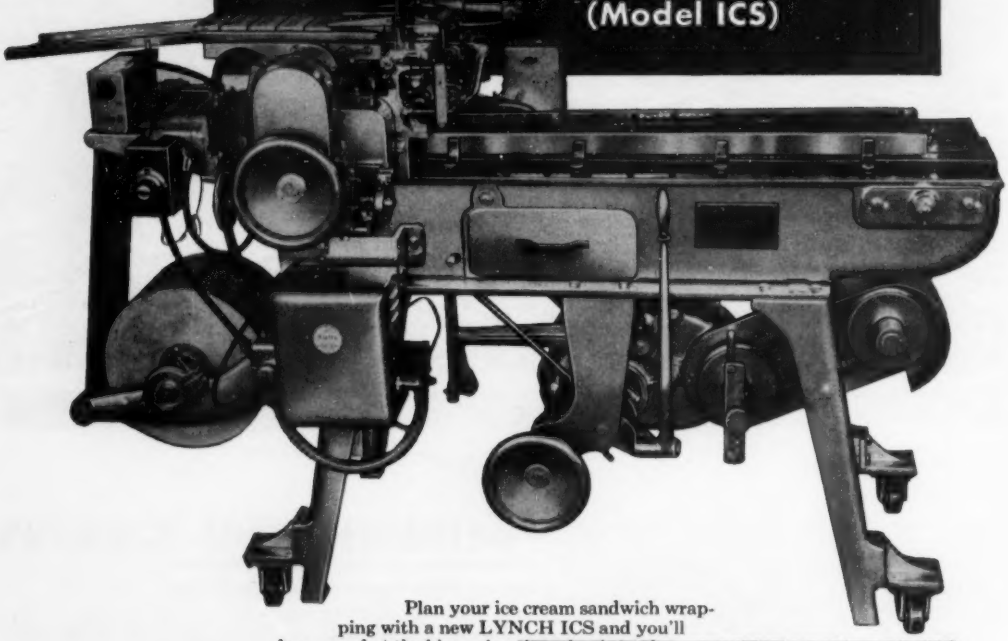
Containers—to help people live better! CANCO

LYN

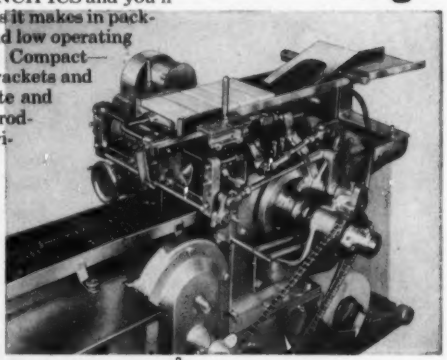
Announces

the new ICE CREAM SANDWICH WRAPPING MACHINE

(Model ICS)



Plan your ice cream sandwich wrapping with a new LYNCH ICS and you'll be amazed at the big savings it makes in packaging costs. With low initial price and low operating cost, it gives you these desirable features: Compact—requiring little space; Portable-mounted on brackets and casters; Easy to clean and sterilize, meeting State and Federal sanitation requirements (metals contacting product are stainless); No product—no paper feed; Variable speed drive wrapping 30 to 120 packages per minute. Standard equipment includes heat seal (no glue), wrap register unit with electric eye and ½ H.P. moisture-proof motor. For more details about LYNCH ICS write or call the Packaging Machine Sales Dept.



Feeding, Wrapping and Sealing Unit.

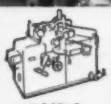
PAR AIR COMPRESSORS

PAR REFRIGERATION COMPRESSORS

WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

LYNCH CORPORATION

PACKAGING MACHINE DIVISION
TOLEDO, OHIO
BRANCHES: NEW YORK • CHICAGO
SAN FRANCISCO • ATLANTA



MORPAC PAPER PACKAGING MACHINES

MORPAC BUTTER & OLEO PACKAGING MACHINES

GLASS FORMING MACHINES

Built to **TAKE** *it!*

CHASE sharkraft

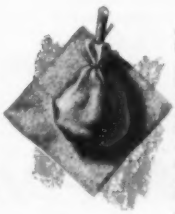
THE ALL-CRINKLED MULTIWALL BAG

Chase Sharkraft is built to TAKE it! Built to cut costly breakage! Every ply is crinkled to combine softness and pliability, to provide high resistance to impacts, shocks, and rough handling. Available with one or more crinkled duplex sheets and with polyethylene liners. Also available with white and colored outer sheets, taped over seams ...and in a wide range of sizes. For the better packaging, and the better acceptance of your product, get the facts on Chase Sharkraft. Your Chase Salesman will be glad to provide you with complete information.

CUTS COSTLY BREAKAGE IN THE PACKAGING OF:

- Farm Products
- Powdered Milk
- Mineral Concentrates
- Seeds
- Feeds
- Chemicals
- Pharmaceuticals
- Fertilizers
- Rock Products
- Meat Scraps and Tankage
- Starch Products

CHASE RAYON BEAM COVERS
Constructed from burlap, adhesive and crinkled paper with strong drawcords sewn in each end. Easily applied. Reduces freight costs! Reusable! A Chase FIRST in Packaging!

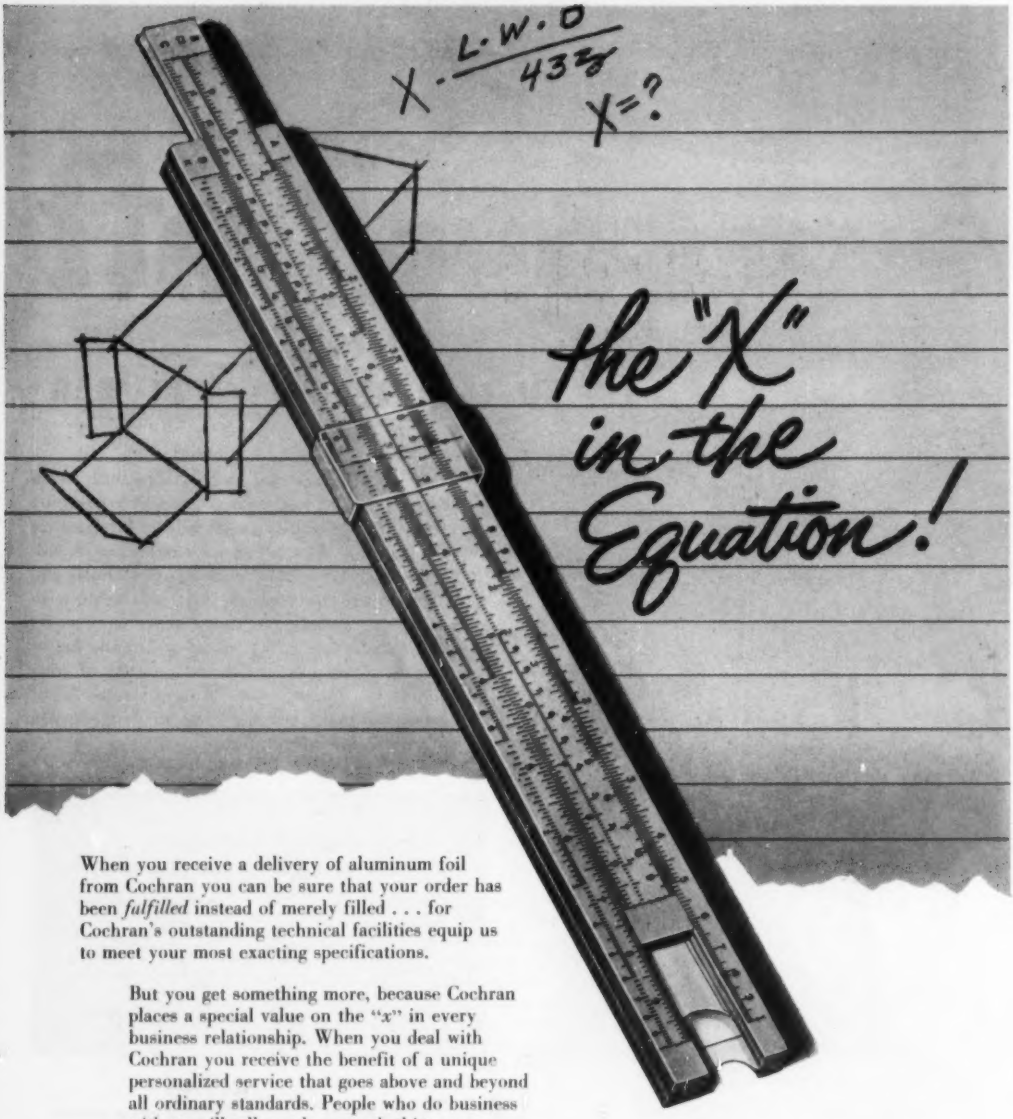


CHASE DUPLEX NURSERY PAPERS
Made from crinkled kraft, laminated with asphalt. Comes in easy-to-handle rolls, in assorted widths, and in pre-cut squares. Protects against sun-scald, frost, rodents and abrasions!

CHASE RED TYE DRAWSTRING BAGS
For mailing or storage of small, hard-to-pack items. Can be attractively printed! Wide range of cloth in any size or quantity required. Chase is America's largest producer of drawstring bags!

CHASE BAG CO. SPECIALTY DIVISION, 309 W. JACKSON BLVD., CHICAGO 6, ILLINOIS

BOISE • DALLAS • TOLEDO • DENVER • DETROIT • MEMPHIS • BUFFALO • ST. LOUIS • NEW YORK • CLEVELAND • MILWAUKEE • RICHMOND, VA. • PITTSBURGH
KANSAS CITY • LOS ANGELES • MINNEAPOLIS • GOSHEN, IND. • PHILADELPHIA • NEW ORLEANS • ORLANDO, FLA. • SALT LAKE CITY • OKLAHOMA CITY
PORTLAND, ORE. • REIDSVILLE, N. C. • HARLINGEN, TEXAS • CHAGRIN FALLS, O. • WORCESTER, MASS. • CROSSETT, ARK. • SAN FRANCISCO



When you receive a delivery of aluminum foil from Cochran you can be sure that your order has been *fulfilled* instead of merely filled . . . for Cochran's outstanding technical facilities equip us to meet your most exacting specifications.

But you get something more, because Cochran places a special value on the "*x*" in every business relationship. When you deal with Cochran you receive the benefit of a unique personalized service that goes above and beyond all ordinary standards. People who do business with us will tell you how much this means.

Cochran FOIL COMPANY

INCORPORATED — LOUISVILLE 10, KENTUCKY

SPECIALISTS IN ALUMINUM FOIL

SALES OFFICES:	714 Wrigley Building Chicago 11, Illinois	632 Fisher Building Detroit 2, Michigan	238 West Wisconsin Ave. Milwaukee 3, Wisconsin	30 Fifth Ave. New York 36, N. Y.	Hippodrome Building Cleveland 15, Ohio	260 Kearny Street San Francisco 8, California

"Gems"

. . . IN VERSATILE METAL CONTAINERS

Personal Designs Our Specialty

40th Anniversary of Quality-Service

Quality **OLIVE CAN COMPANY** *Service*

MANUFACTURERS • DESIGNERS

PLAIN • LITHOGRAPHED

METAL CONTAINERS

450 N. LEAVITT ST., CHICAGO 12, ILLINOIS

(non-flowing compounds)

(medium viscosity creams)

Look at the range of products filled on one Arenco filler

(water-thin suspensions)

Products which are so tough that they need a healthy shove to put them into tubes are handled with the same ease as free-flowing liquids by the versatile Arenco Filler.

The Arenco is fast and accurate. It's easy to keep sterile. And it fills an extreme range of containers, too—from tiny 1 cc vials to giant 250 cc (8¾ ounce) collapsible tubes. With minor adjustments an Arenco will fill tubes, jars, cartridges and vials.

Sterility Only stainless steel or resistant metal contacts the product being filled. All of these parts—including the stainless steel single cylinder pump—are easily and quickly demountable for cleaning and sterilization.

Changeovers Size adjustments and material changeovers take only minutes—not hours. And the Arenco will fill most products at speeds from 40 to 55 containers per minute.

Accuracy Even when the smallest quantities are being filled, the Arenco maintains the high degree of accuracy for which it is world famous. Recent tests on filling 1 cc ampoules show accuracy to ± 1%. "Give-away" on larger fills is minimum.

Service The same quarter century old organization which has serviced and is servicing 2,000 other Arenco machines of all types in every part of the country is available to service your Arenco filler. Competent mechanics and complete stocks of spare parts are always on hand. The nearest Arenco representative can supply full details. Contact him now.

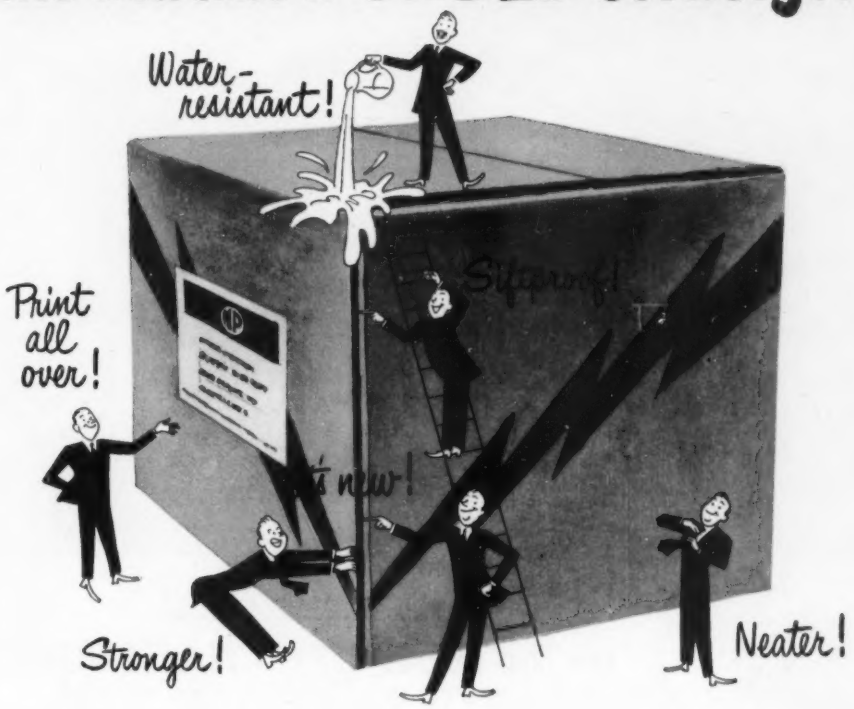
Hopper or filling head to fit product. No container, no fill. Automatic cleaning and cap tightening for tubes.

ARENCO *Machine Co.*
INCORPORATED
25 West 43rd Street, New York 18, N. Y.

Representatives

R. P. Andersen Co., 317 Texas Bank Bldg., Dallas 2, Texas
Tom McLay, P. O. Box 214, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Kruse Packaging Machinery, 5807 W. North Ave., Chicago 39, Ill.
Canada: Richardson Agencies, Ltd., 454 King St., West Toronto

This box has a GLUED corner joint!



STRONGER THAN THE BOXBOARD ITSELF. Drum tests, compression tests, tensile-strength tests all show that there is no stronger joint than a glued joint made with DAREX RESIN EMULSION ADHESIVE. This *extra* strength provides *better protection* for your products during handling, shipping and storing.

SIFTPROOF. A glued corner joint is *siftproof*, which means better protection for your products against dust and dirt . . . especially for bulk products.

WATER-RESISTANT. DAREX RESIN EMULSION ADHESIVE is an *extremely* water-resistant glue of immense strength. Even when wet, a glued corner joint retains its giant grip. There are no wire stitches to pull out or to snag and damage your products.

PRINT ALL OVER. There is nothing to cover up or interfere with all over printing. Your shipping cases can be transformed into "traveling billboards". Since it's estimated that the average shipping box is worth over 150 advertising "impressions", this is a powerful yet inexpensive way to build product identification.

DEWEY and ALMY
Chemical Company

Plants and sales offices throughout the world.

Ask your BOX MAKER about

"The box with the glued corner joint"!

To make this new joint, most box makers use DAREX RESIN EMULSION ADHESIVE. It is a result of Dewey and Almy packaging research . . . a continuing research program that has brought to the packaging industry such varied Dewey and Almy products as: resin emulsion adhesives for boxes, bags and tape; packers' adhesives; the CRYOVAC process for food packaging; thermoplastic inner coatings for collapsible tubes.

Want more facts? Write today!

Dewey and Almy Chemical Company
Cambridge 40, Mass.

. . . I am a box maker . . . a box user

Please send without obligation complete information about Glued Lap Joint boxes made with Darex Resin Emulsion Adhesives.

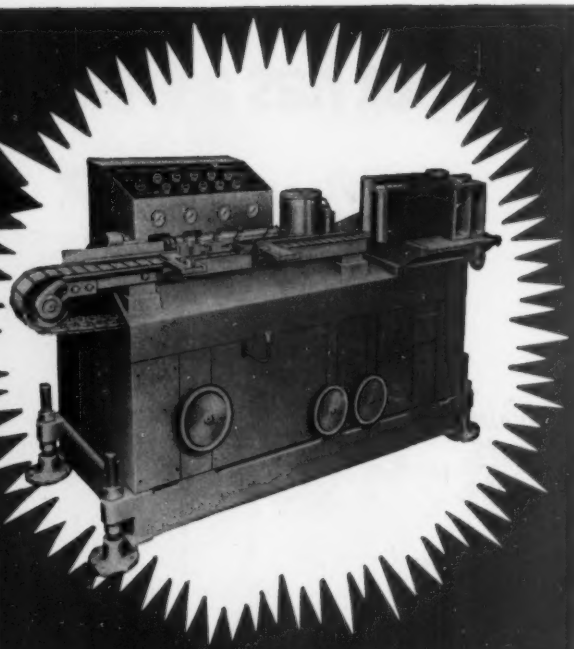
Name.....

Company.....

Title.....

Address.....

150
PER MINUTE
sustained
DAY-LONG production



LABELING without glue!
on the Label-DRI® CHALLENGER

No other labeling equipment ever offered so much production at such low cost. It's the modern, DRY method, eliminating all the fuss and coddling you pay for in "downtime" with glue problems.

Push-a-button, and the *Label-DRI* starts a day-long run—without interruption. Push-a-button at closing time. The intervening hours are ALL production.

You rarely need change-parts, because there is no glue mechanism on this *modern* trouble-free labeler!

COSTS NO MORE THAN OTHER AUTOMATIC LABELERS WITH LESS CAPACITY

•

HANDLES ROUND, FLAT OR TAPERED SHAPES

•

AMPULES TO QUARTS

•

Other models for Speeds up to 60 per minute; or 300 per minute—and more!

913

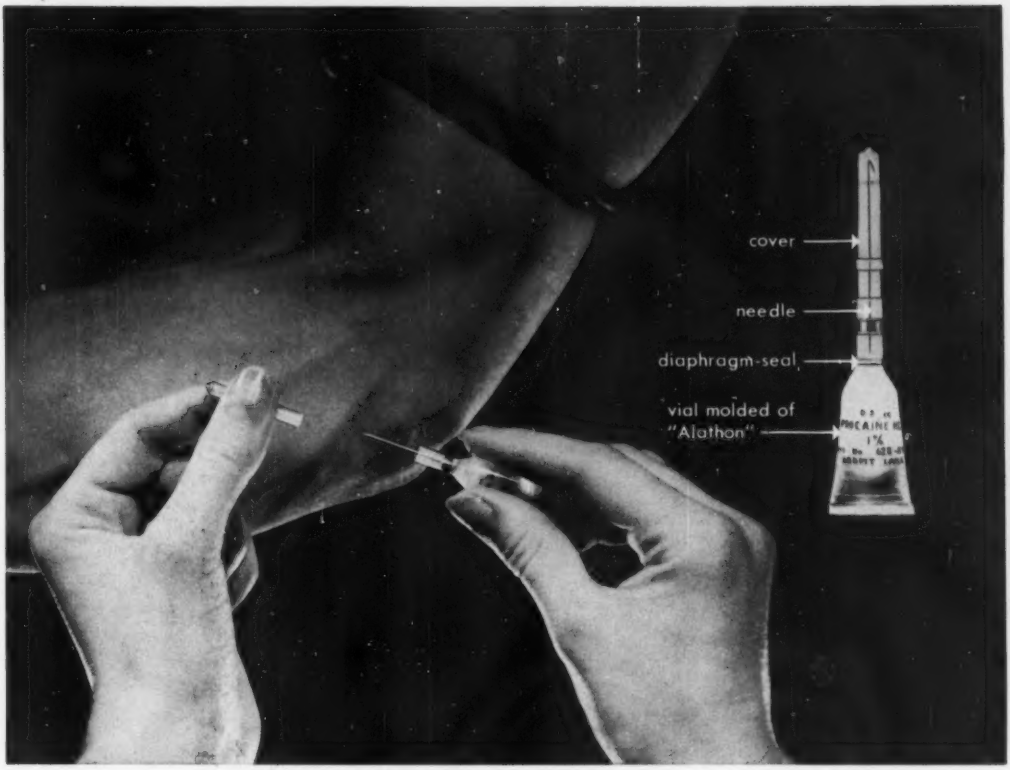
Ask for Catalog . . . Try the DRI-way!

NEW JERSEY MACHINE *Corporation*

AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES
325 W. HURON ST., CHICAGO 10, ILL.
1701 CAREW TOWER, CINCINNATI 2, OHIO
2500 W. 6TH ST., LOS ANGELES 5, CAL.

MAIN OFFICE & FACTORY: 1510 WILLOW AVENUE, HOBOKEN, N. J.



New disposable hypodermic syringe has vial molded of Du Pont "ALATHON"

It's another packaging improvement made possible by the outstanding properties of "Alathon"

This new disposable syringe, the "Hypovial," is now used to give local anaesthetic to blood donors before use of the blood-receiving needle. It features the proper anaesthetic dosage and a needle in one handy, lightweight unit . . . packaged and sterilized *before* delivery. The one-piece syringe vial is injection-molded of Du Pont "Alathon"* polythene resin—complete with a diaphragm seal. To use the syringe, the needle cover is depressed, forcing the bottom of the needle through the seal. Then the cover is removed, and the needle is inserted in the donor's arm. Simple finger pressure on the vial injects the anaesthetic. The entire syringe is then discarded.

"Alathon" is used because of its unique combination of properties. It is readily molded into intricate shapes. "Alathon" is lightweight, and its strength in thin sections means many low-cost units per pound. "Alathon" is odorless, tasteless, nontoxic . . . contains no plasticizer . . . is inert to most packaged goods at room temperatures. It will not break, crack, chip or peel. Packages of "Alathon" are easily heat-sealed . . . and they are squeezable.

"Alathon" is used for many different applications in the packaging industry. It is molded into a variety of closures and containers. It is widely used as a coating for paper wraps. And blended with waxes, "Alathon" improves the heat-sealing characteristics, appearance and scuff-resistance of waxed papers.

We suggest you investigate the properties of Du Pont "Alathon" for your future packaging applications. We'll gladly discuss the possibilities of improving your present packages or developing new ones. For full information write:

E. I. du Pont de Nemours & Co. (Inc.)
Polychemicals Department, District Offices:
350 Fifth Avenue, New York 1, New York
7 S. Dearborn Street, Chicago 3, Illinois
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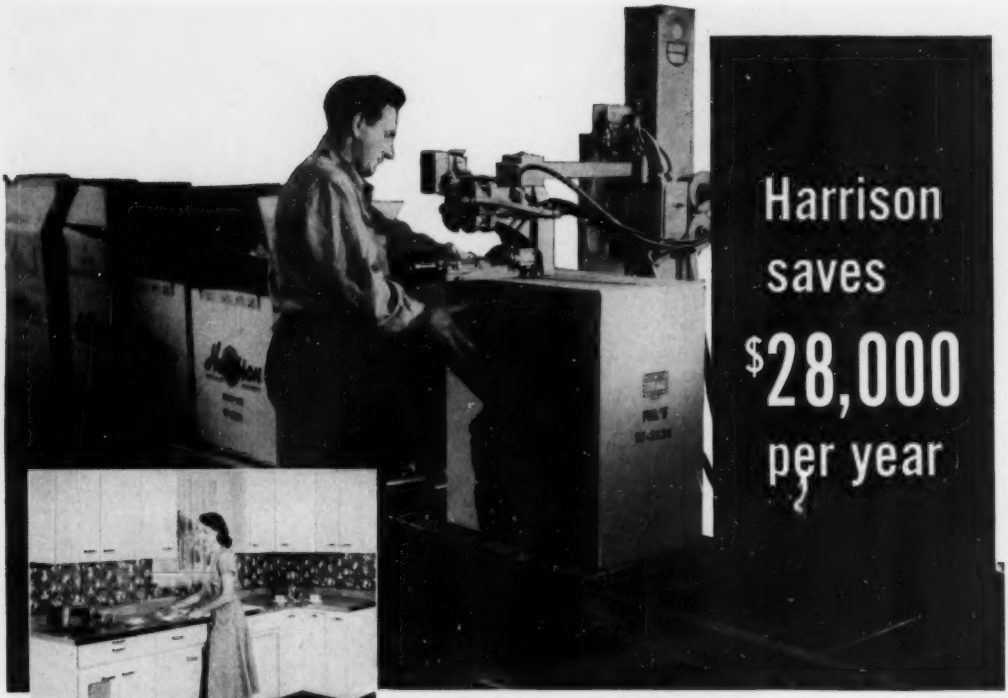
*REG. U. S. PAT. OFF.

Molded by Quinn-Berry Corp., Erie, Pa., for Univial Corp., Rutherford, N. J. Complete package supplied by Abbott Laboratories, North Chicago, Ill. "Hypovial" is a trademark of the Univial Corporation.

DU PONT
REG. U.S. PAT. OFF.
150th Anniversary
Better Things for Better Living
. . . through Chemistry
Polychemicals
DEPARTMENT
PLASTICS • CHEMICALS



Kitchen wall, sink and base cabinets like these are shipped in corrugated cartons closed by International Staplers.

with International Carton Stapling Machines

$28,000 saved in a year . . . $112,000 in the last four years! Unbelievable? Chester C. Cain, executive vice president of Harrison Steel Cabinet Co., Chicago, found it hard to believe, too. But read what he has to say:

"Four years ago we installed two International Retractable Anvil Stapling Machines to close corrugated shipping cartons for our line of kitchen wall cabinets, sink cabinets and base cabinets. We staple the tops and bottoms simultaneously after the cabinets are in the cartons. The machines . . . one for regular production . . . one for overflow production . . . cost $1,640 each.

"A year later, figures showed our packaging costs had gone down $28,000. Working conditions were easier for our men . . . and the equipment had paid for itself in only a month and a half.

"Formerly, we packaged about 300 units each 8-hour day, using 13 or 14 men to set up boxes, seal the bottoms, place cabinets inside, and seal the tops.

"Now with only 6 men . . . one to operate the stapler, and the rest to pack and feed, we're closing 600 cartons each 8-hour day . . . twice as many, and the closures are better."

If you ship in corrugated or fibre containers, an International Retractable Anvil Stapling Machine can close them better, faster and more economically. Write for detailed information.

a seal of security

INTERNATIONAL STAPLING MACHINES

International Staple & Machine Company
806 East Herrin Street, Herrin, Illinois

try VINYLITE plastic cast film on your packaging problems

examine the sample facing this page...

check its transparency, toughness, long service life

Look at this piece of VINYLITE Cast Film. Notice its clarity and transparency, its toughness and tear strength. Test its resistance to moisture, gases, grease and chemicals.

You'll find that VINYLITE Cast Film merits consideration because of these excellent qualities. Moreover, its good aging characteristics mean extended service life. Its durability is built-in. It can be heat-sealed to form a strong, lasting closure. Laminated to foil, it results in a packaging material that's even more serviceable.

Think what VINYLITE Cast Film can mean to the packaging of your product! A wrapping that stays fresh, soft and flexible—that won't discolor—on shelf goods, in storage, or during reuse by the consumer. Special formulation is odorless and tasteless. It's excellent for many packaging applications. It withstands frequent handling. Its high degree of transparency enhances the sales appeal of its contents.

Send for a larger sample. VINYLITE Cast Film is well worth looking into. Its packaging uses range from aircraft engines to powderpuffs. It has the same properties that make VINYLITE Resins and Plastics so useful for scores of home, industrial and defense applications. To learn more about it, write Dept. OL-55.

Vinylite
BRAND
PLASTIC CAST FILM

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
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30 East 42nd Street, New York 17, N.Y.

John Dale OF ENGLAND

for quality containers

Collapsible tubes, metal containers, closures to your exact specification—and made with p-r-e-c-i-s-i-o-n

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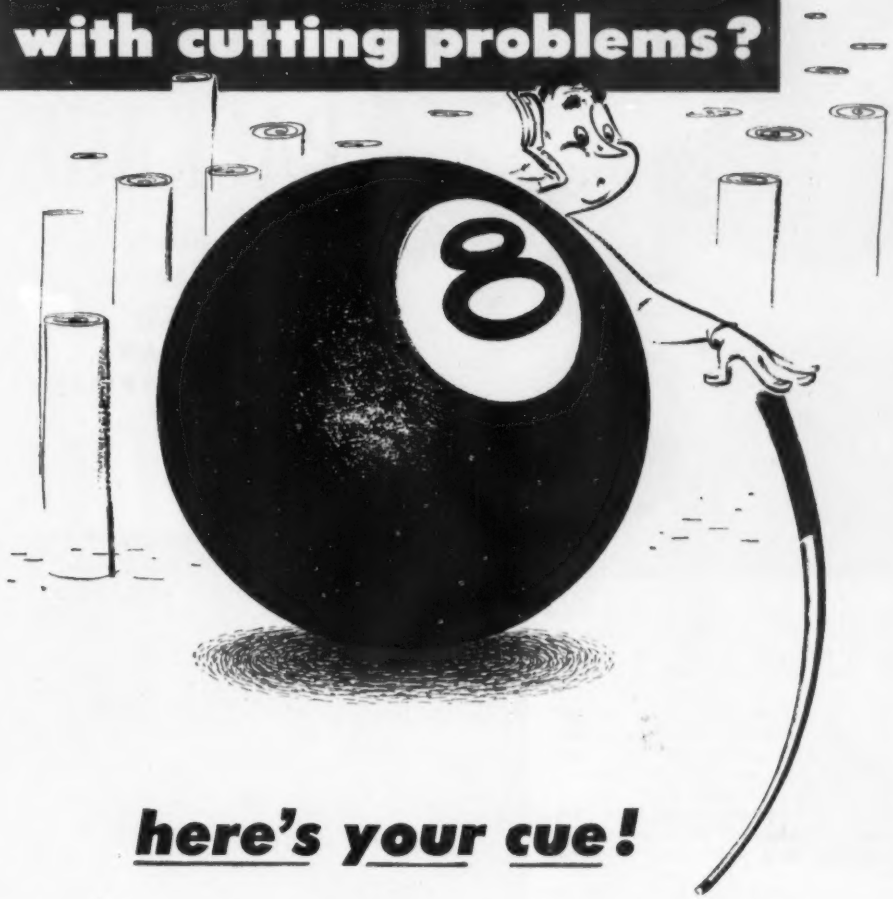
JOHN DALE LIMITED, BRUNSWICK PARK ROAD, NEW SOUTHGATE, LONDON, N.11, ENGLAND. TEL: ENTERPRISE 1272

behind the 8-ball with cutting problems?



here's your cue!

Maybe *you* don't rate cutting as much of a problem. Maybe you don't even do it in your plant. But look . . . *you* pay the bills for having it done. You lose time when delays occur. Your costs rise when your material is inaccurately cut. Chances are a Beck Sheeter can help detour these costs. It cuts everything from rolls . . . paper, film, cellophane, etc. Right now it's even being used to cut chenille rugs. Can it fit into your operation? Think it over . . . and tell us your problem.

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OPEN AMAZING NEW SALES POSSIBILITIES

RADO PACKAGES* are the sort of things Sales Managers and Marketing Directors dream of but rarely find—practical, radically new, low-cost packages that ideally lend themselves to all-out consumer promotion.

RADO PACKAGES are *all plastic*. They are made automatically and continuously from a wide range of thermoplastic materials, both clear and opaque. The packages are made and filled simultaneously and can be of regular or irregular shape.

Equally suitable for liquids or pastes, RADO PACKAGES can even be produced in the form of unique capless collapsible tubes which have self-sealing apertures.

If you feel your product could benefit from this *new type of packaging* that is novel, practical, low cost and wonderfully responsive to consumer promotion, write to the Main Office of Technopol Laboratories, or to the Packaging Service Station nearest you for additional facts.

*U.S.A. Patent Nos. 2,517,027, 2,530,400
British Patent Nos. 599174, 599183
Patented in 36 other countries. Other patents pending.

TECHNOPOL LABORATORIES LIMITED

Tel: London Wall 9452-9453 • 212 St. John Street, LONDON, E. C. 1, England • Cables, Telabor, London

Packaging Service Stations:

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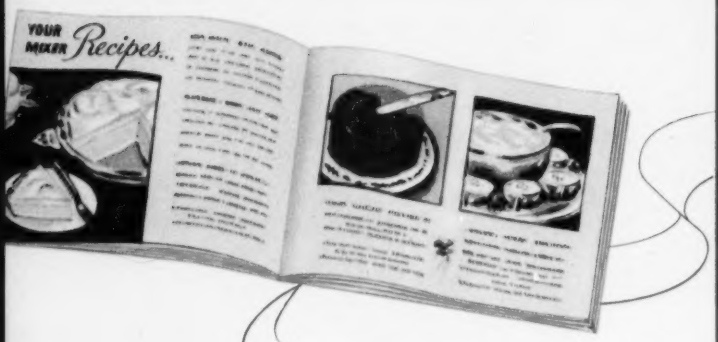
MILLS AT RUMFORD, MAINE, AND WEST CARROLLTON, OHIO



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ALUMINUM...TIN...LEAD...COMPOSITION TIN AND LEAD

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No. 6 in a series
THE CLEVELAND CONTAINER COMPANY presents the sixth in a series of informative messages to assist all manufacturers, distributors or sellers of products which require more efficient, economical and attractive packaging.

FUNDAMENTALS OF CONTAINERS IN PACKAGING!

Type No. 6—METAL END SCREW CAP CANS

These cans are generally classified as mailing containers. They are made of high test chipboard, spirally wound to relatively heavy wall thickness . . . a minimum of 1/8" for small diameters and slightly under 1/4" for cans with diameters of 3 1/2" or more. This provides more than adequate wall strength for safety of the product in transit. Because of the rigid heavy wall, these containers are sealed on the bottom with a special knurled crimped metal end ensuring an exceptionally tight closure. The top is provided with a metal threaded ring crimped in the same manner. A metal threaded cap is shipped separately from the can. All metal ends are stamped from bright tin plate.

The Metal End Screw Cap Container (an economical mailing case) meets all postal regulations. Because of its heavy wall construction and removable cover it becomes an ideal package for repeated use. Ideal for the packaging of fishing rods, toys, welding rods, repair kits and kitchen utensils. Safe and compact storage of nuts, bolts, washers and small parts; safe and compact mailing of glass jars, bottles, clinical specimens, small tools and instruments are but a few of the many uses of the screw cap can. Protected mailing and storage of charts, maps and blue prints are added applications.

* * *

WHY PAY MORE? FOR THE BEST . . . CALL CLEVELAND!

SIZES AVAILABLE . . . Screw Cap Cans are made in diameters from 3/4" to 4 1/2" inside diameters, and in lengths to meet your requirements.

VARIATIONS . . . As a merchandising package, screw cap cans may be provided with special lining materials which act as protective barriers for hygroscopic or oil base materials. Popular liners are paraffin, parchment, glassine, foil, asphalt duplex kraft, cellulose acetate and government specification anti-corrosive papers, and VPI liners now available for industrial use. Metal ends may be embossed for identifying or advertising purposes. Added safety in packaging heavy instruments or parts is accomplished by use of a pressed-on threaded type bottom. This metal end is knurled and crimped in the same manner as the standard bottom and when combined with the crimped threaded ring and metal top provides the maximum of protection.

LABELS . . . This container may be labeled to customer specifications or, within size limitations, may be direct-printed in a single color. Preprinted wrap-around or decorative paper may be spirally wound on the outer surface of the can at a nominal cost.

SHIPPING . . . All Cleveland Containers are packed and shipped in uniform high test cartons which ensure proper delivery, ease of handling and economy of storage space.

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The CLEVELAND CONTAINER Co.
6201 BARBERTON AVE. CLEVELAND 2, OHIO
• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes
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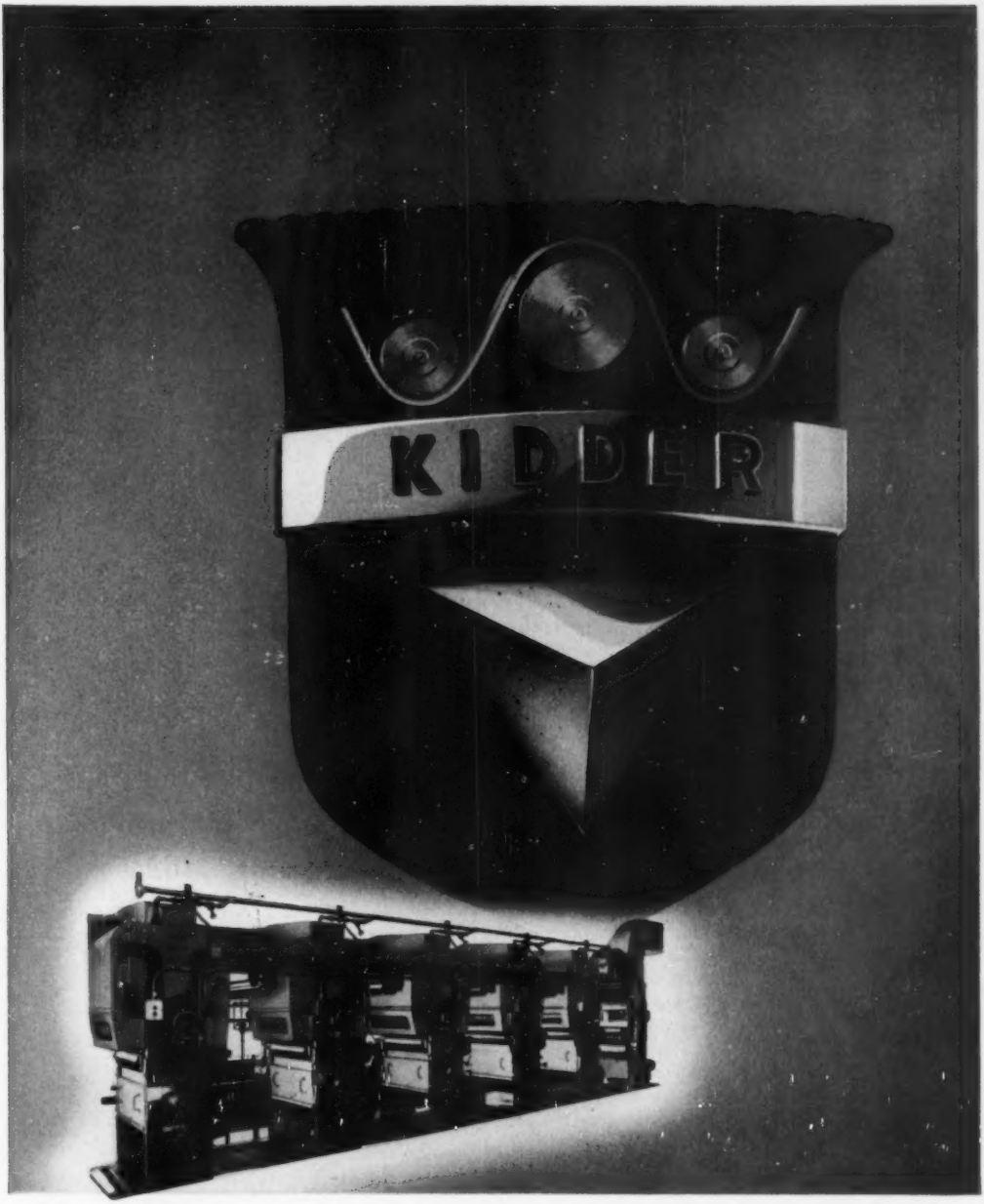

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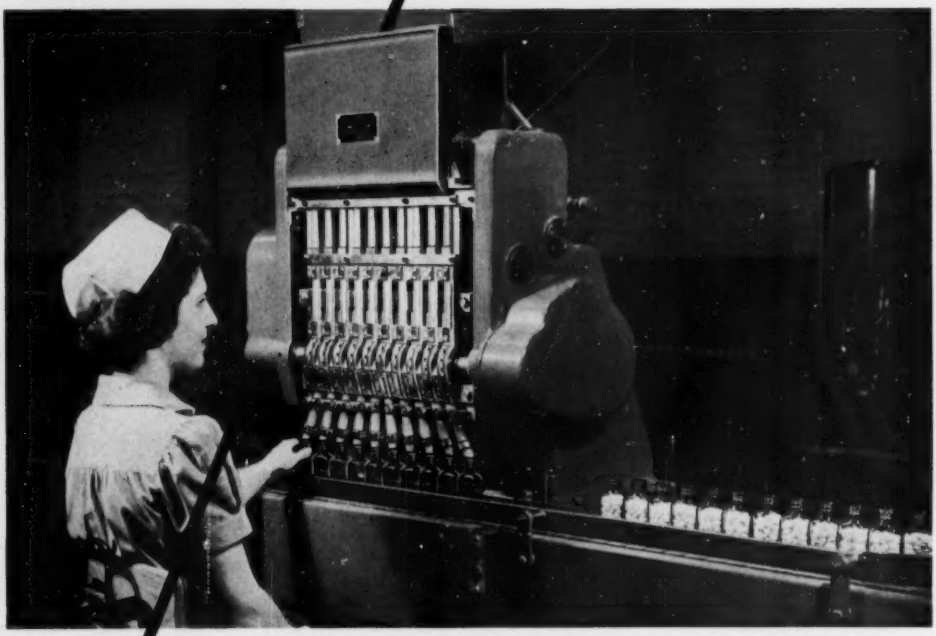

The Arner Company Packages Billions of Tablets with the Fully Automatic Model TBS

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New heat-sealable container for chemicals...

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Gives top performance where a "breather" type package is required—at little cost.

VISKON IS HEAT-SEALABLE!
Generally, VISKON seals at between 350° and 500°F, corresponding with dwell time and jaw pressure.

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Holds its shape, yet is soft and flexible. Has exceptionally high *wet* strength.

VISKON IS NON-TOXIC!
It's tasteless, odor-free, completely sanitary for use as a container. Lint-free and non-raveling.

VISKON® nonwoven fabrics
... another product to fit today's needs by
THE VISKING CORPORATION
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...ideal where porosity, product breathing, absorption, diffusion, infusion and wet strength are needed!

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VISKON is made of rayon and cotton fibers bonded with cellulose . . . with characteristics ideally suited for packaging. Heat-sealable **VISKON** is non-raveling, lint-free, odorless, tasteless, non-toxic and completely sanitary.

VISKON is furnished in mill rolls, tapes or sheets . . . in a large selection of weights and grades in either cotton or rayon fabric. Whatever *your* container problem, investigate **VISKON** today. Mail coupon below for complete information and samples.

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Position.....
Company.....
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industrial packaging co., inc. Manufacturers of Folding Paper Boxes
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Champlain

NEW CHAMPLAIN SHEETER FOR ROLL FED EQUIPMENT CUTS UP TO 12,500 SHEETS PER HOUR*

Ideal companion for Champlain high-speed inline rotogravure and rotary aniline presses. This new sheeter cuts consistently square sheets from roll stock *1½ times faster than any other standard sheeter.*

HIGH SPEED . . . from 8,500-10,500* sheets per hr. (400-500 feet per minute) of glassine and paper backed foil to 12,500* sheets per hr. (600 feet per min. upward) of paper and cardboard.

ACCURATE . . . square cut sheets to 1/64" accuracy, any stock — any speed.

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JAM-PROOF . . . self-clearing mechanism positively handles each sheet separately. NO DANGER OF TEARING, FOLDING, BUCKLING, OR COCKING.

NO WASTE TRIM . . . variable, all-size cut-off and accurate cutting deliver sheets ready for the ream cutter.

VERSATILITY . . . handles all paper, board, foil, and most specialty stocks with equal ease.

Write today for catalog of Champlain presses and bulletin on this NEW sheeter.

Sheets per hour based on maximum sheet size.

CHAMPLAIN COMPANY, INC.

88 LLEWELLYN AVENUE, BLOOMFIELD, N. J.

CHICAGO OFFICE: 520 N. MICHIGAN AVE., CHICAGO 11, ILL.

8659

Champlain manufactures a complete line of rotogravure, aniline, rotary letterpress and allied equipment for packaging and specialty printing.

NO CARTON TOO LARGE

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ACM CARTONS!

A new new name . . . a new product . . . and a new carton "precision produced" by ACM . . . for *another* National merchandising leader!

Jumbo cartons—for display—are more and more becoming a "must" in merchandising and marketing plans. ACM *jumbo* cartons "billboard" your consumer carton to the buying public, and are a definite aid in swinging the decision in your favor at the point of purchase.

The American Coating Mills Corporation offer their "no cost to you" service, and will gladly send a representative to counsel with you on the design—or redesign—of your carton.

AMERICAN COATING MILLS CORPORATION
ACM CARTONS — CLAYCOATED BOXBOARD

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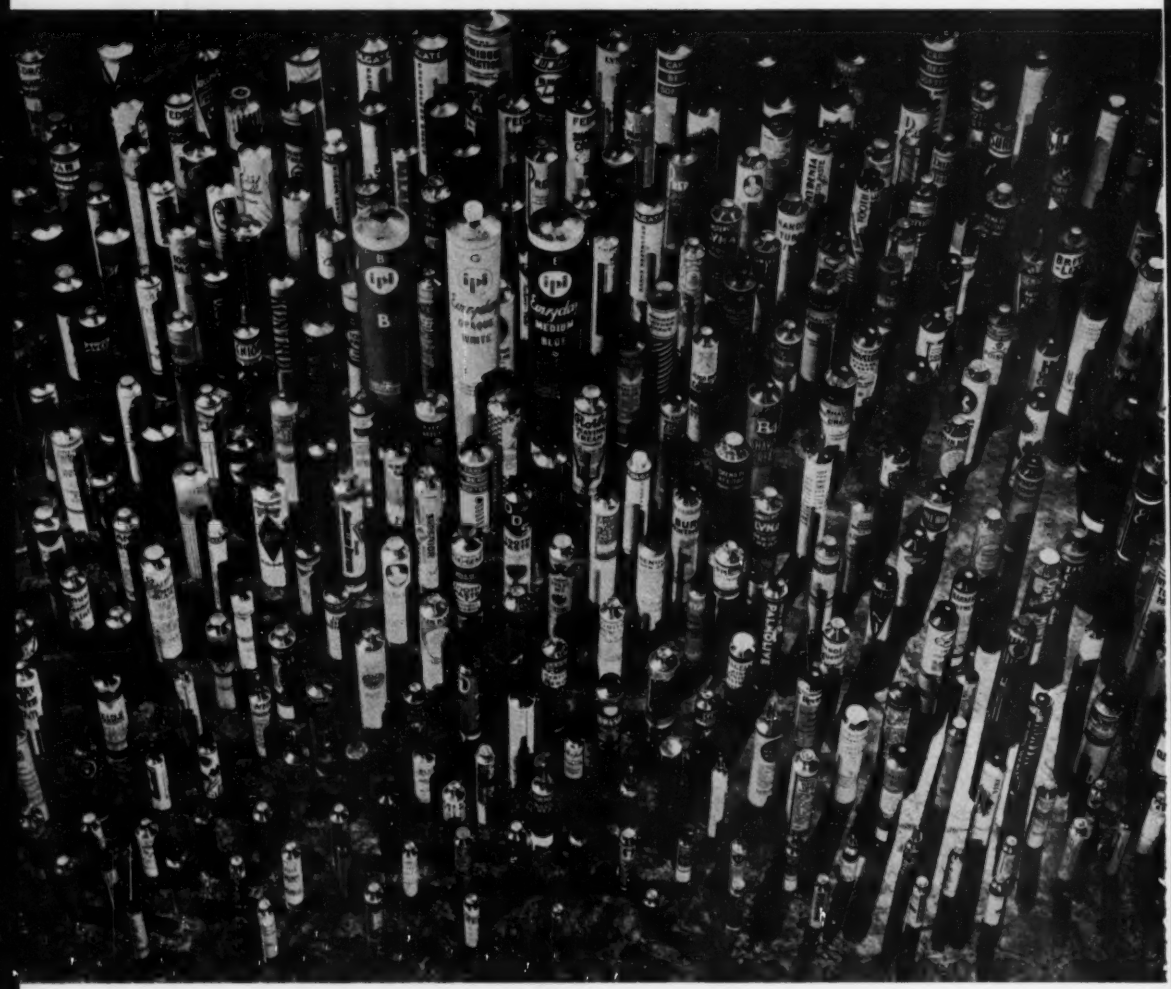
White Metal's

CAVALCADE OF FAMOUS NAMES IN COLLAPSIBLE TUBES



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Quality Collapsible Tubes and Metal Can Spouts Since 1913

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Mid-West Sales Office: 2099 Montcalm Street, Indianapolis, Indiana Capitol 6385
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Milprint Rotogravure
Printed Cellophane overwrap
Flamingo
6 GOLDEN WAFFLES
READY-TO-EAT TOAST 'N SERVE
Swift's Premium
TURKEY
READY FOR
ROASTING
KEEP FROZEN
Milprint printed
Polyethylene Bag
to melt a COOL customer...
use Milprint frozen food packages
Customers can't remain cold to the warm appeal of a Milprint package, with its bright good looks and colorful design. That cheerful "pick-me-up" look just naturally makes it stand out in frozen food display cases.
Milprint offers the widest range of packaging materials and printing processes of any packaging organization . . . plus nationwide facilities backed by over half a century of experience. For packages that thaw sales resistance *fast*, call your Milprint man *first!*
Gorton's
COD FILLETS
Gorton's
Milprint Rotogravure
printed foil overwrap
Milprint INC
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING
Printed Cellophane, Pliofilm, Polyethylene, Acetate, Glassine, Foils, Folding Cartons, Bags, Lithographed Displays, Printed Promotional Material.
General Offices, Milwaukee, Wisconsin
Sales Offices in Principal Cities
This insert printed by Milprint, Inc.

1,222 different size pulleys packaged on one CECO® ADJUSTABLE CARTONER

The world's largest manufacturers of cast iron and pressed steel FHP V-belt pulleys, Maurey Manufacturing Corporation, Chicago, Ill., package 1,222 different size pulleys on a single Model 3901 CECO Adjustable Cartoner.

Changeover time for each different size carton averages less than 30 seconds. Labor savings range from 30% to 70% over previous packaging methods.

CECO OFFERS 3 TYPES of ADJUSTABLE CARTONERS INCLUDING SEMI-AUTOMATIC and FULLY-AUTOMATIC MACHINES each in the

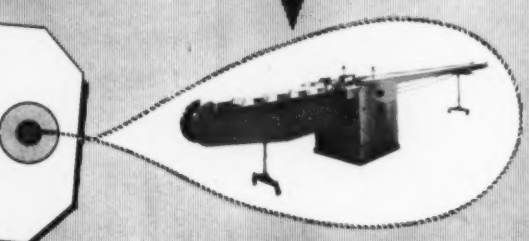
LOW PRICE RANGE

Products packaged economically on CECO Model 3901 include:

- Pharmaceuticals
- Electric Appliances
- Macaroni Products
- Hardware
- Automotive Parts
- Dry Goods
- Building Supplies
- Dairy Products
- Chemicals
- Cosmetics
- Cigars

CECO Model 3901

The most versatile and lowest cost adjustable carton glue sealer in the packaging business. Hundreds in successful operation for large and small concerns all over the world. Carton set-up and product insertion are manual. Cartons are closed automatically.



All CECO Cartoners are adjustable quickly without special tools by unskilled help for a wide range of carton sizes. Economical for long or short runs. All models can glue-seal both ends, or seal one end and tuck the other, or tuck both ends. CECO Cartoners produce clean, square, stronger cartons at less cost and with less floor space. A CECO Cartoner generally pays back its low cost in less than a year. Let us prove it. Send for details.

Quick Delivery

Prefabricated standard components and modern assembly lines permit delivery of some standard models within two weeks.

CONTAINER EQUIPMENT CORPORATION

MEMBER, PACKAGING MACHINERY MANUFACTURERS INSTITUTE

78-88 LOCUST AVENUE, BLOOMFIELD 2, N. J.

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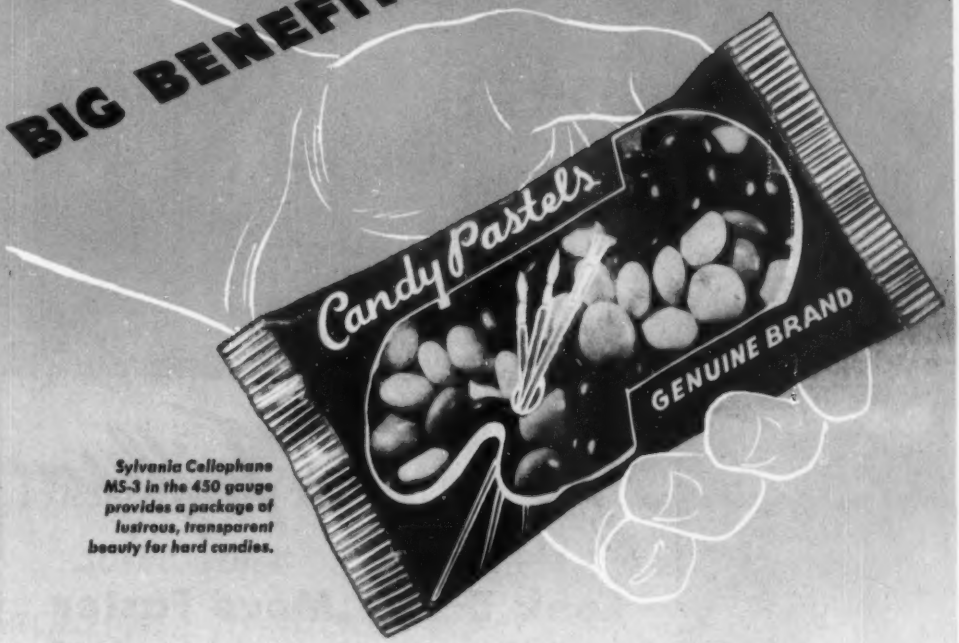
SYLVANIA CELLOPHANE

BIG BENEFIT WRAP



Sylvania Cellophane MS-3 in the 450 gauge provides a package of lustrous, transparent beauty for hard candies.

Sylvania Cellophane offers confectioners a *combination* of benefits that helps products sell faster—makes the packaging dollar go further.

It is *moisture-resistant*—Sylvania Cellophane safeguards quality from producer to purchaser. It *beautifies packaging*—the crystal-clear transparency of Sylvania Cellophane permits immediate product identification. It *protects freshness and flavor*—Sylvania Cellophane prevents infiltration of dust, dirt and harmful vapors . . . discourages pilfering and tampering.

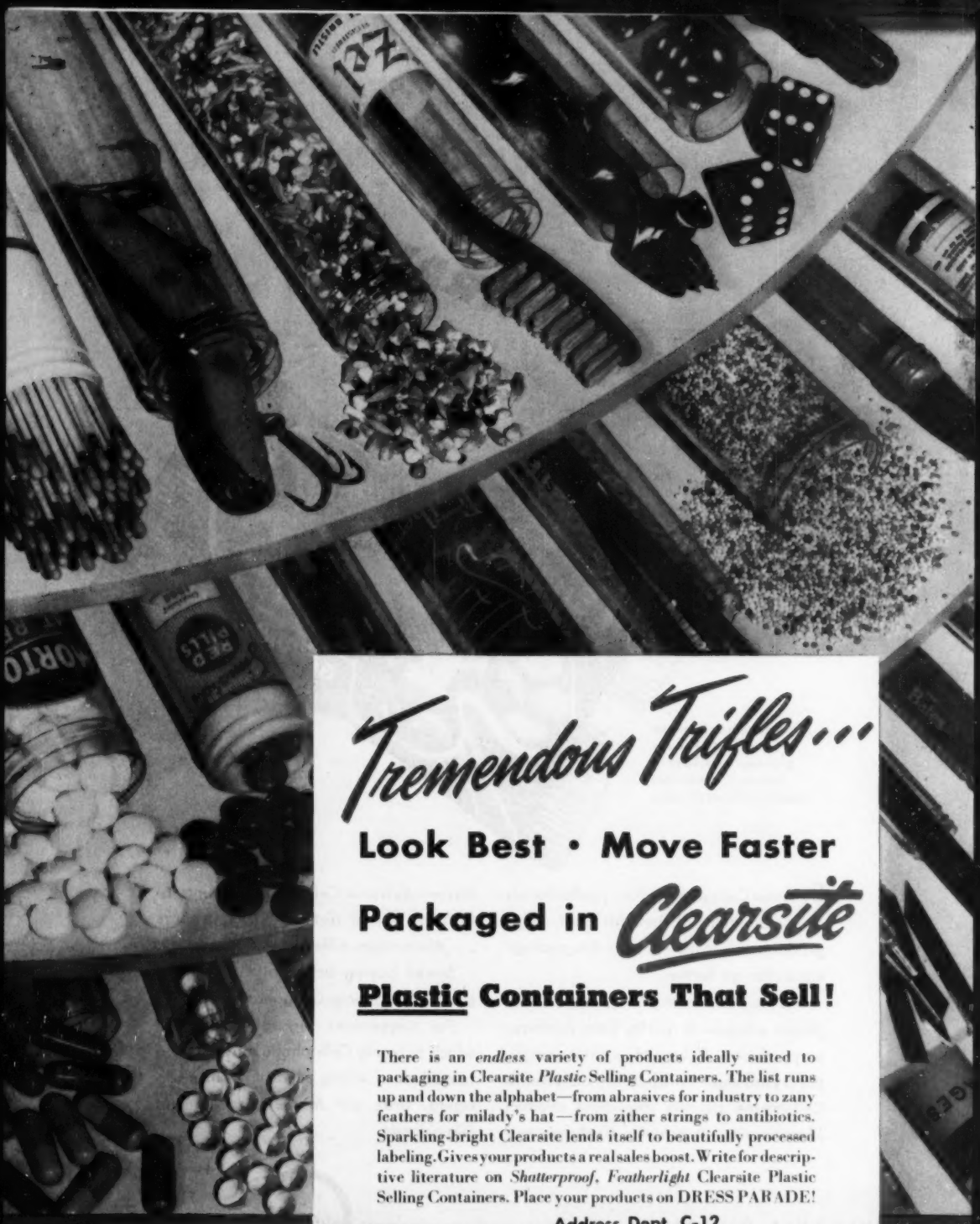
Speed buying action at the point of sale with *Sylvania* Cellophane.

For suggestions regarding ways in which Sylvania Cellophane may be used to add extra selling power to your packaging, write our Market Development Department.

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION

SYLVANIA CELLOPHANE

General Sales Office:
1617 Pennsylvania Blvd.
Philadelphia 3, Pa.



Tremendous Trifles...

Look Best • Move Faster

Packaged in *Clearsite*

Plastic Containers That Sell!

There is an *endless* variety of products ideally suited to packaging in Clearsite *Plastic* Selling Containers. The list runs up and down the alphabet—from abrasives for industry to zany feathers for milady's hat—from zither strings to antibiotics. Sparkling-bright Clearsite lends itself to beautifully processed labeling. Gives your products a real sales boost. Write for descriptive literature on *Shatterproof, Featherlight* Clearsite Plastic Selling Containers. Place your products on DRESS PARADE!

Address Dept. C-12

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General Offices: 50 Avenue L, Newark 5, N. J.

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Clearsite ... is foresight

What tape would you use?

To keep unauthorized employees from wandering into restricted areas?

To form tightly-banded "combination deals" that are real winners?

To make certain that shipments for *Boston* don't wind up in *Houston?*

These free folders solve your packaging problems

Six fact-filled brochures tell you how "SCOTCH" Brand Pressure-Sensitive Tapes simplify these tough packaging jobs: can and tube sealing; carton sealing and reinforcing; labeling, decorating, identifying; box sealing; bag and package sealing; holding and bundling.

Send coupon at right for these useful bulletins. No charge, no obligation of course.

MINNESOTA MINING & MFG CO.
St. Paul 6, Minn. MP 122

☐ *Please send full set of 6 bulletins*

☐ *Send only bulletins on ( ) Can and Tube Sealing ( ) Carton Sealing and Reinforcing ( ) Labeling, Decorating, Identifying ( ) Box Sealing ( ) Bag and Package Sealing ( ) Holding and Bundling.*

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

The term "SCOTCH" and the plaid design are registered trademarks for the more than 200 pressure-sensitive adhesive tapes made in U.S.A. by Minn. Mining & Mfg. Co., St. Paul 6, Minn.—also makers of "SCOTCH" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives. General Export: 122 E. 42nd St., New York 17, N.Y. In Canada: London, Ont., Can.

SCOTCH BRAND Pressure-Sensitive Tapes

GET MORE STRENGTH AT THE SEAMS

...with tailor-made Riegel papers

A few things RIEGEL can do for you . . .

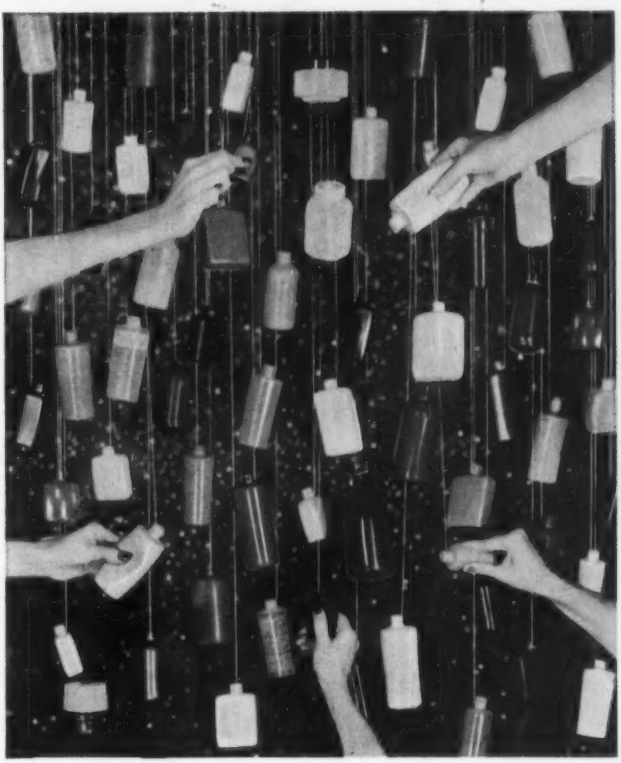
- Keep products dry
- Keep products moist
- Retard rancidity
- Seal with heat or glue
- Provide wet strength
- Stop grease penetration
- Retain aromas, flavors
- Resist extreme cold
- Reduce breakage
- Prevent sifting
- Protect from light
- Resist alkalis
- Resist corrosion
- Boost machine efficiency

A SHEET OF PAPER doesn't make a package until you add a seam. Getting a strong, uniform seal at high speed posos one of the most vital problems in functional packaging. It is a problem Riegel has solved for hundreds of different products, from cereals and desserts to chemicals and drugs. Invariably the paper must also combine many of the protective functions listed at left. In one case the answer may be a simple glassine for high-speed glue sealing . . . in another it may be a triplex lamination of foil and special glassines for heat-sealed, vapor-proof packages. Whatever *your* packages may need, Riegel can develop the right papers . . . quickly, efficiently, economically. Write to *Riegel Paper Corporation, P. O. Box 170, Grand Central Station, New York 17, N. Y.*

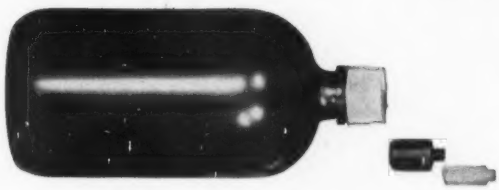
Riegel FUNCTIONAL PAPERS FOR PROTECTIVE PACKAGING

- WRITE FOR SAMPLE BOOK

develop your "counter-punch" with Plaxpak bottles



As sales records demonstrate —products develop sales momentum quickly when they're packaged in the Plaxpak polyethylene bottle. Offering new vitality in color appeal, this package gives your product sales punch at the counter. Then, as a follow-through for repeat sales, it provides the blessings of light weight and unbreakability plus the convenience of squeeze dispensing.



Full range of colors and sizes in stock shapes make it easy to obtain the Plaxpak bottle best suited to your product requirements.

With our smart and varied stock shapes you can package distinctively in the Plaxpak bottle at minimum expense. Or a unique, custom shape can be produced.

PLAX CORPORATION

Subsidiary of Emhart Mfg. Co.

WEST HARTFORD, CONNECTICUT

In Canada: Plax Canada, Limited, Toronto ——— District Sales Offices: New York, Chicago and other principal cities.
Plax® blow-molded products made under U.S. Pats.: 2128239, 2175053, 2175054, 2230180, 2230190, 2260750, 2283751, 2345176, 2349177, 2349178.

From the Gardner Gallery of famous American Packages

An Attitude

...THE UNSEEN INGREDIENT

Actually, it *can* be seen. Look closely at any product that has become an American buy-word—and you'll see more than the physical materials of which it is made.

You'll see the attitude of men determined to make and market a superior product. Look closely at any Gardner carton—and you'll see reflected that very same attitude.

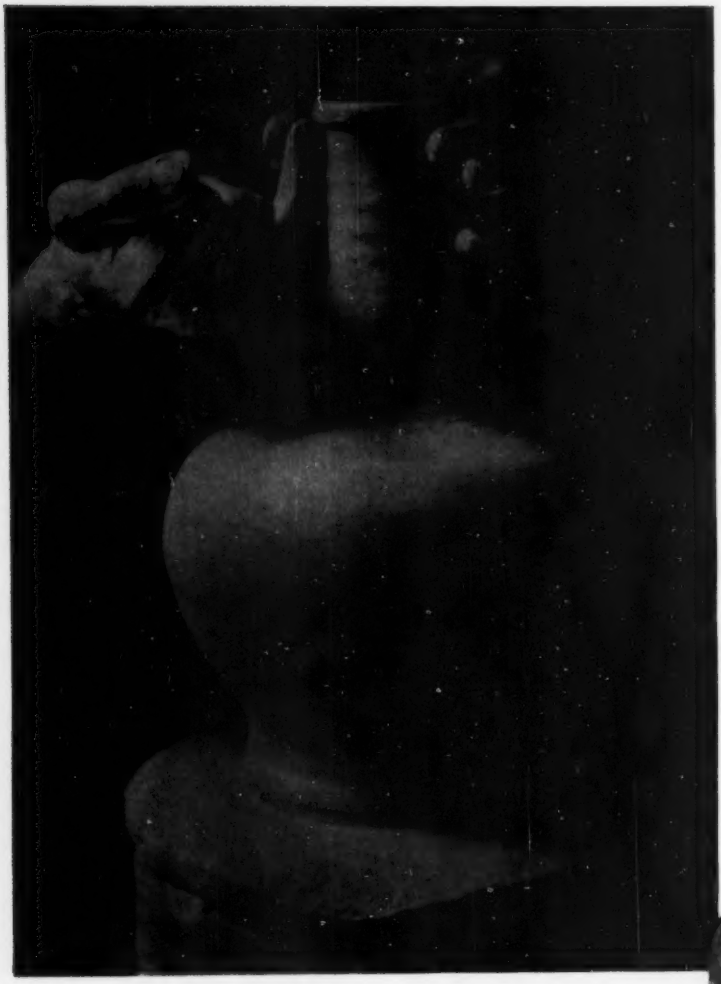
Here at Gardner we believe in never being quite satisfied with a good job. We feel an obligation to ourselves—and to our customers—to do even better, tomorrow, what we have gained recognition for doing well today.

We think that's an important reason why you'll find so many of America's most famous products packaged in Gardner cartons.

THE GARDNER BOARD AND CARTON CO.

Manufacturers of Folding Cartons and Boxboards

GENERAL OFFICES: Middletown, Ohio—PLANTS: Middletown, Ohio; Lockland (Cincinnati), Ohio
***Sales Offices** in Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis*



The ultimate of quality, care, craftsmanship ...go into *Rowell Boxes*

The creative art of the master pottery-maker finds its counterpart in the exacting skill Rowell devotes to making fine set-up boxes . . . a skill known by packagers everywhere.

E. N. Rowell Co. Inc.

Mfrs. Fine Paper Boxes
Batavia,
N. Y.

Now 24.5% Less

DESICCITE 25

Required in Your Method II Packages Under the New Packaging Desiccant Specification

MIL-D-3464

This specification now recognizes the long standing superiority of Filtrol's desiccant – Desiccite* 25 in producing safe, low relative humidity levels.

The same high quality, highly efficient Desiccite 25 as manufactured for the past 11 years by the World's Largest Manufacturer of Desiccants, Catalysts and Adsorbents, now gives you these advantages:

LESS WEIGHT
LESS VOLUME
LESS COST

IMPORTANT NOTICE

The new specification MIL-D-3464 eliminates all grade designations such as A, B and C, and chemical names such as silica gel.

CAUTION

Do not mistakenly specify silica gel or any grade of desiccant in your orders and requests for quotations.

For a complete summary of all important points concerning the new specification MIL-D-3464, mail this coupon today.

Please send me new literature on specification MIL-D-3464
GENERAL OFFICES: 727 West 7th Street, Los Angeles 17, California

NAME

TITLE

STREET ZONE STATE

CITY

Filtrol* CORPORATION

GENERAL OFFICES:
727 West 7th Street, Los Angeles 17, California

Distributors located in principal cities throughout U.S.A. and Canada.

*T.M. REG. U.S. PAT. OFF.

Smart way to Secure Sealing

On the opening twist, the slotted band of Alcoa's Pilferproof Closure breaks away from the smooth working, leakproof top. It reveals *immediately* that the bottle has been opened.

To discourage tampering and pilferage of your product—to build dealer and customer confidence in its unerring quality . . . consider this modern sealing operation. Economically, you can cap, seal and protect up to 400 bottles a minute by Alcoa's exclusive "tailor-made" process that rolls on closure threads to match the glass.

For full information on Pilferproof and other Alcoa Closures, just call your local Alcoa Sales Office, listed under "Aluminum" in your classified phone directory. Or write for free catalog.

ALUMINUM COMPANY OF AMERICA
Pittsburgh 19, Pennsylvania

ALCOA
ALCOA CLOSURES
FORMERLY SOLD AS ALSECO SEALS

Here's How Alcoa Pilferproof Closures Reveal Tampering

The rolled-on locking ring joined to the cap shows that the Alcoa Pilferproof Closure has never been opened.

Cap, when removed, breaks away from locking ring, gives permanent evidence of tampering.

"SEE IT NOW" with Edward R. Murrow — CBS-TV every Sunday . . . brings the world to your armchair. Consult your newspaper for local time and channel.

GAYLORD

QUANTACOLOR STYLED

BUTTER CARTONS

Self-Selling FOR SELF SERVICE

You can spotlight your product anywhere with the eye-appeal of scientifically selected color and design. Take advantage of Gaylord's exclusive QUANTACOLOR system in your next cartons—a special Gaylord service that costs you nothing extra.

Gaylord Boxes

Investigate the sales stimulating power of Gaylord QUANTACOLOR in:

- beer cartons—6 and 12 can carriers
- gift packages for liquor
- frozen food boxes
- small parts and appliance cartons
- toy and novelty boxes
- flower and plant cartons
- folding carton counter displays

...and many others.

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General Offices: ST. LOUIS • Branches: New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Indianapolis • Los Angeles Seattle • Houston • Oakland • Minneapolis • Detroit • Columbus • Fort Worth • Tampa • Dallas • St. Louis • Cincinnati • Des Moines Oklahoma City • Portland • Greenville • San Antonio • Memphis • Kansas City • Bogalusa • Chattanooga • Milwaukee • Weslaco • New Haven Amarillo • Appleton • Hickory • Sumter • Greensboro • Jackson • Miami • Omaha • Mobile • Philadelphia • Little Rock • Charlotte • Cleveland

FOLDING CARTONS • CORRUGATED AND SOLID FIBRE BOXES • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

means

in ALUMINIUM FOIL

To the manufacture of packaging foil of every kind, plain or printed, coated or laminated, Venesta Ltd. bring the knowledge that comes from long experience. Venesta were already making foil for packaging long before its unique protective properties were widely recognised. To-day their rolling plant is amongst the largest and best-equipped in the world. In technical skill, in mechanical efficiency, in the selection of raw materials, and in their rigorous system of laboratory control, Venesta have the means to offer you top quality in aluminium foil for every packaging requirement. Whatever you need in foil, it will pay you to consult Venesta Ltd. and let them put you in touch with the nearest of their many agents in all parts of the world.

A PRODUCT OF THE PACKAGING DIVISION

VENESTA LTD., Vintry House, Queen Street Place, London, E.C.4, England. *Cables: Venesta, London*
T.A. 4536

It's smart to stick with Swift's Adhesives

They serve you and the grocer, too!

In modern, self-service merchandising—where eye appeal often makes the sale—Swift's Adhesives serve successful manufacturers in many important ways. For example, they keep packages neatly sealed . . . maintain the appearance of paper products . . . provide a lasting bond for labels on bottles, jars and cans.

When you need adhesives, always remember—

- Swift has years of specialized experience in adhesive production.
- Swift works with a broad range of quality raw materials.
- Swift has extensive adhesives manufacturing facilities . . . distribution points from coast to coast.

Two adhesives for packaging operations:

Swift's Liquid adhesive for top and bottom sealing, tite-wrap work. Fast setting, clean machining, non-warp type.

High Speed Case Sealing Adhesive—designed for both high speed machine and hand application. A Dextrin adhesive with extremely fast set and clean machining.

Faultless Starch Company, Kansas City, Mo., uses Swift's Adhesives for top and bottom sealing —to keep Faultless Starch Cartons neat and attractive at the point of sale.

Call **SWIFT** first for **ADHESIVES**

Swift & Company
Adhesive Products Department
Chicago 9, Illinois

This offer expires Jan. 31, 1953

Please send your 100-lb. introductory trial shipment of:

☐ Swift's Top and Bottom Adhesive
☐ Swift's High Speed Case Sealing Adhesive

At the quantity price

These will be tested for use in our operations. We understand, if not fully satisfactory, they may be returned for credit at your expense.

Name _____ *Title* _____

Firm name _____

Address _____

City _____ *Zone* _____ *State* _____

Beauty **Strength** **Quality**

From the Largest 2″ Diameter

to

The Smallest 3/8″ Diameter

made

IN ALL COMMERCIAL STYLES

Write for Samples and Quotations

ATLANTIC MFG. CO.

557-563 Belmont Avenue Newark 8, New Jersey

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OVER FORTY YEARS OF KNOWING HOW

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Curtis Bldg.
Detroit, Michigan

E. S. Browning Co.
1515 Third St.
San Francisco, Cal.

EYE STOPPER

That's the effect a Dennison designed seal gives your package. It has that something extra—the result of constructive imagination, designing talent, manufacturing teamwork. Dennison experience and versatility offer you the finest in packaging accessories — tags, seals, wraps, bands, labels, merchandise cards, set-up boxes. For samples and suggestions appropriate to your product, call nearest Dennison sales office or write Dennison Manufacturing Co., Framingham, Mass.

Dennison

PAPER PRODUCTS FOR MORE THAN A CENTURY

A new angle ...for selling a new pen

SHEAFFER'S NEW "SNORKEL" pen is a revolutionary new invention that takes the "dunk" out of pen filling. Now filling is easier, quicker, cleaner.

To package this excitingly new pen, Sheaffer uses a set-up box designed and manufactured by Dennison. The easel box presents the pen *at a vertical angle*, to draw attention to the point and the "SNORKEL" tube. The panel of bright gold foil and the embossed sunburst design heighten this attention-getting value.

Since 1921 Dennison has made distinguished set-up boxes for Sheaffer, always with a careful eye on fashion trends and on costs. The result has been outstanding — in beauty of packaging and in selling success.

When your package does full justice to your product, sales go up. Dennison designing talent, engineering skill and complete production facilities can create an individual, sales-appealing package for *you*.

Call the nearest Dennison office or write Dennison Manufacturing Company, Box Division, Marlboro, Massachusetts.

Special Snorkel filling tube drinks ink with siphon action

LOOK TO

Dennison

FOR PACKAGING THAT REFLECTS THE VALUE OF YOUR PRODUCT

NEW WAYS

TO USE PAPER BAGS FOR BETTER PACKAGING

AIRLINES

Air Sickness and Psychology

Reassurance against possible embarrassment in itself helps relieve distressed travelers. Special paper bags with moisture- and odor-proof linings fit flat into seat compartments. Tin ties provide quick, effective closures; make containers more readily disposable. Clean, sanitary-looking white outer surface may be imprinted with suggestions for controlling nausea before it reaches the distress point.

DENTISTS

Sanitary Container For Dentures

Plates and other dental work can be kept clean in cellophane or glassine bags. Useful to dentists and dental laboratories. A workable promotion idea as give-aways for manufacturers of dental preparations. Also appreciated by the traveling public when made available on trains, ships, in hotels, etc.

GOLF

Paper Wrap for Clubs

Small water-proof bags with tin tie closures may be made especially to fit heads of golf clubs. These low-cost protective coverings can be colorfully printed. As a promotion device, they command attention both for their novelty and their usefulness. Write Sales Promotion Dept., Union Bag & Paper Corporation, for details.

HOTELS

Bags Spark Promotions, Public Relations

Small items of extra service frequently make greater impression on guests than plush furnishings. Special paper bags for soiled laundry, slippers, combs and other personal effects cost little, make good friends. Bags can be printed with hotel identification and appropriate copy.

Odds are, your most efficient low-cost packaging medium can be a paper bag.

UNION BAG & PAPER CORPORATION

WOOLWORTH BUILDING • NEW YORK 7, NEW YORK

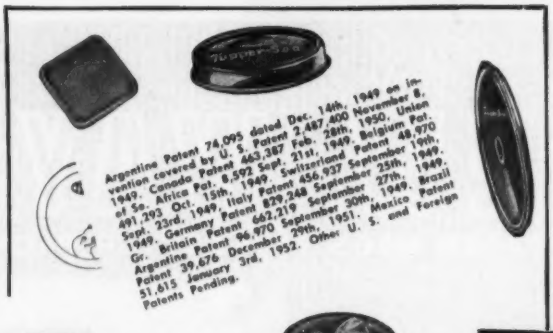
Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cone Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Pat. 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,793 Oct. 15th, 1949. Italy Patent 456,937 September 19th, Sept. 22rd, 1949. Switzerland Patent 48,970 1949. Germany Patent 662,219 September 25th, 1949. Gr. Britain Patent 96,970 September 27th, 1949. Argentine Patent 39,676 December 29th, 1949. Brazil Patent 51,615 January 3rd, 1952. Other U. S. and Foreign Patents Pending.

TUPPER / Seals

air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER /

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

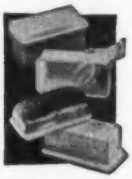
Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

TUPPER CORPORATION

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Por Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.



The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.

When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

TUPPER CORPORATION

TUPPER

Manufacturers of — CONSUMER, INDUSTRIAL, PACKAGING AND SCIENTIFIC PRODUCTS

Factories, Laboratories and Sales Offices: Farnumsville, Mass., Orlando, Fla., L'Epiphanie, P. Q.

Showrooms: 225 Fifth Ave., N.Y.C.

ADDRESS ALL COMMUNICATIONS TO: Department MP-12

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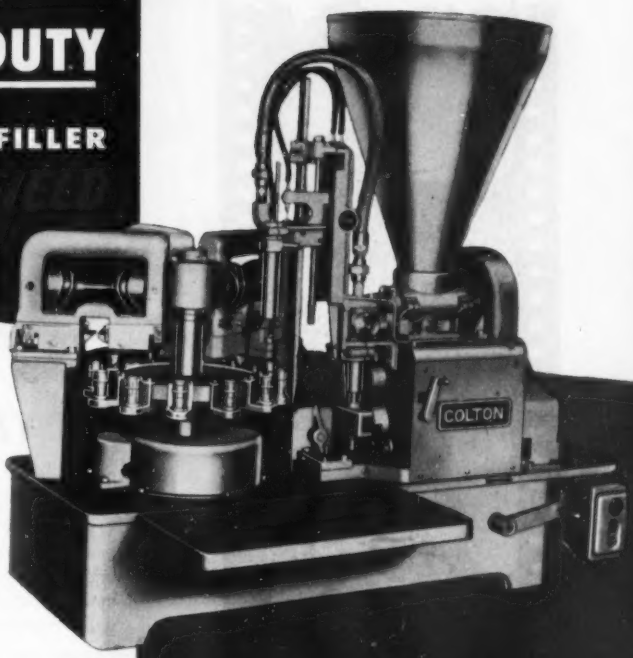
HEAVY DUTY

SEMI-AUTOMATIC TUBE FILLER IN THE



The new Colton No. 160 is the FIRST *heavy-duty*, full range tube filler in the low-price field.

It is the ONLY low-priced tube filler with the heavy construction necessary for handling heavy, ropey materials such as caulking compounds, etc. And, being a full range machine, it also fills every consistency of cream, paste and liquid, as well as powders, into tubes, jars, bottles or cans.

It provides semi-automatic, continuous operation with one attendant. New, direct-motion feeding and crimping mechanism. Famous Colton filler head and many other quality features as on higher-priced machines. Bench or stand type available. Capacity 36 tubes per minute; tube sizes up to 1½" x 7".

We suggest you write for specification sheet and catalog of sixteen cost-cutting items of packaging equipment including a complete line of hand-operated equipment.

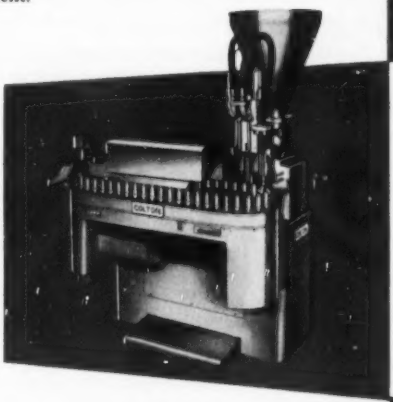
ARTH

PLANT NO. 2
PLANT NO. 3

COLTON TUBE FILLER AND CLOSER

No. 180

Companion machine to No. 175 with the same speed, precision and economy but designed for larger tube dimensions. Tube sizes up to 1¾" x 7½". Capacity up to 90 tubes per minute. Complete range of auxiliary equipment.



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Modernized version of the world's most popular automatic tube filling machine; unmatched in speed, precision and economy in filling tubes, jars, bottles, cans, with pastes, creams, liquids, powders. Tube sizes up to 1½" x 7¼". Capacity up to 85 tubes per minute. Complete range of auxiliary equipment.

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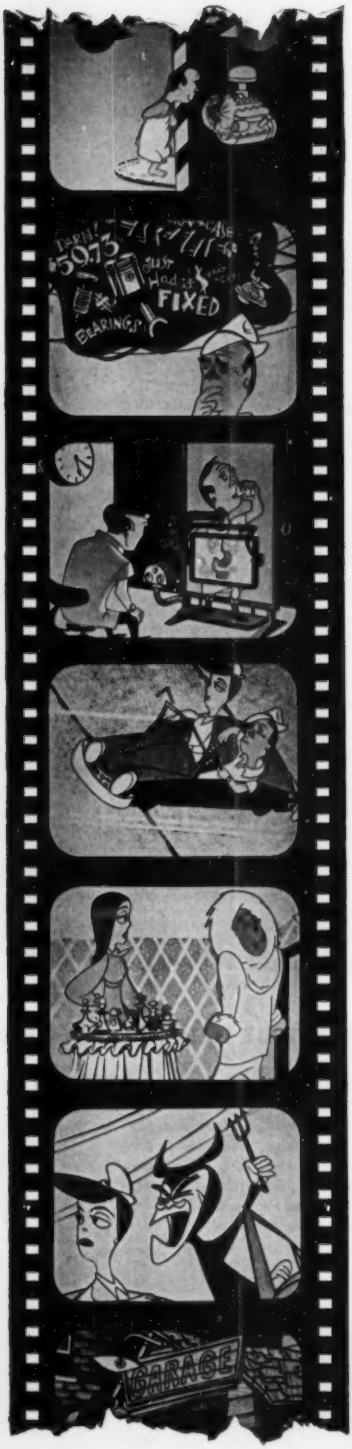

At your age!

If you are over 21 (or under 101) it's none too soon for you to follow the example of our hero, Ed Parmalee, and face the life-saving facts about cancer as presented in our new film "Man Alive!". You'll learn, too, that cancer is not unlike serious engine trouble—it usually gives you a warning:

(1) any sore that does not heal (2) a lump or thickening, in the breast or elsewhere (3) unusual bleeding or discharge (4) any change in a wart or mole (5) persistent indigestion or difficulty in swallowing (6) persistent hoarseness or cough (7) any change in normal bowel habits.
While these may not *always* mean cancer, any one of them should mean a visit to your doctor.
Most cancers are curable but *only* if treated in time!

You and Ed will also learn that until science finds a cure for *all* cancers your best "insurance" is a thorough health examination every year, no matter how well you may feel—twice a year if you are a man over 45 or a woman over 35.

For information on where you can see this film, call us or write to "Cancer" in care of your local Post Office.

American Cancer Society

MAN ALIVE! is the story of Ed Parmalee, whose fear weakens his judgment. He uses denial, sarcasm and anger in a delightful fashion to avoid having his car properly serviced and to avoid going to a doctor to have a symptom checked that may mean cancer. He finally learns what a difference it makes (in his peace of mind and in his disposition) to know how he can best guard himself and his family against death from cancer.

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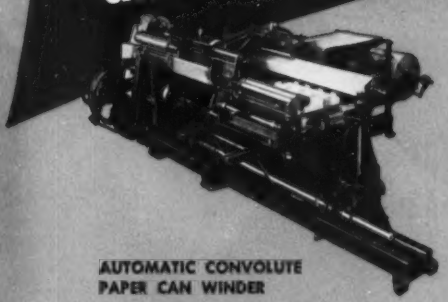
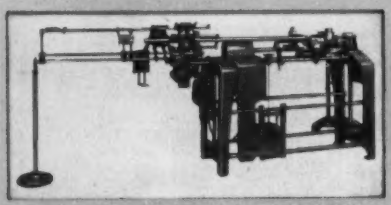
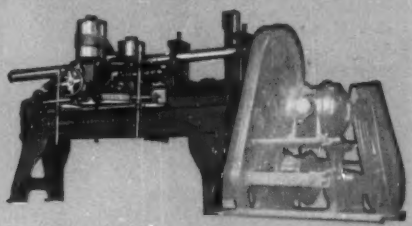


AUTOMATIC CONVOLUTE PAPER CAN WINDER

Winds paper can bodies from 1 ¾" to 8" in diameter on the round and from 1 ½" to 8" across diagonal corners on irregular shapes such as square, rectangular, oval, triangular, etc.



No. 77 KNOWLTON SPIRAL TUBE WINDER AND CUT-OFF—Winds paper tubes from 2 to 5 ply and from ¼" to 1" in diameter.



No. 4 SPIRAL TUBE WINDER

Winds paper tubes from 2 to 22 plies and from ¾" to 10" in diameter. Can be furnished with cut-offs and glue stands to fit manufacturers' particular needs. Optional machines for cutting tubes in single or multiple lengths, rough or finished cores, or cutting light and heavy side walls up to ½" thickness.

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CORES for Toilet and Towel Tissue, Paper Mill Rolls, Textiles, Gummed Tapes, etc., Hygienic Supplies.

CANS for Household Products: Powdered Milk, Cocoa, Dry Cereal, Spices, Baking Powder, Salt, Popcorn, and other dry foods; Cleaners, Detergents, Medicinal and Pharmaceutical Supplies, Powdered Soap.

Industrial and Commercial Products:
Automotive Parts, Machinery Parts, Manufacturing Supplies, Military Supplies, Ammunition Containers and Electrical and Radio Coils. Feminine Fancies: Cosmetics, Dusting Powder, Girdles.

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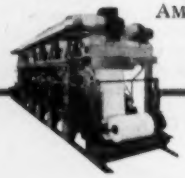
C.R. is one of the many exclusive features of ATF-Klingrose rotogravure presses which make them the greatest value for high-speed, large-volume, multicolor rotogravure printing.

*Controlled Rewinding—
an exclusive ATF-Klingrose feature



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Type faces shown are: Century Bold and Italic, Century Schoolbook

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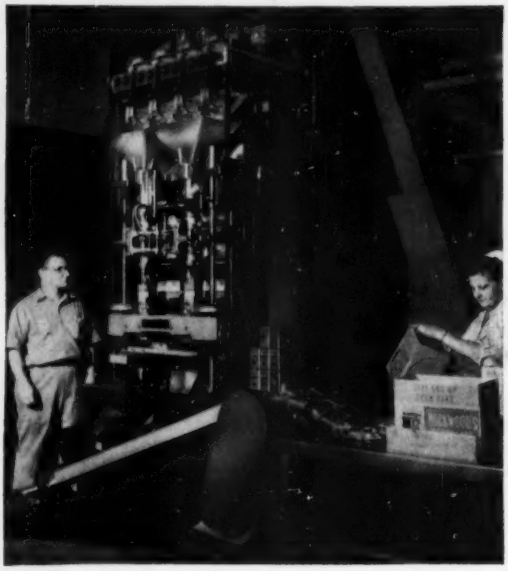

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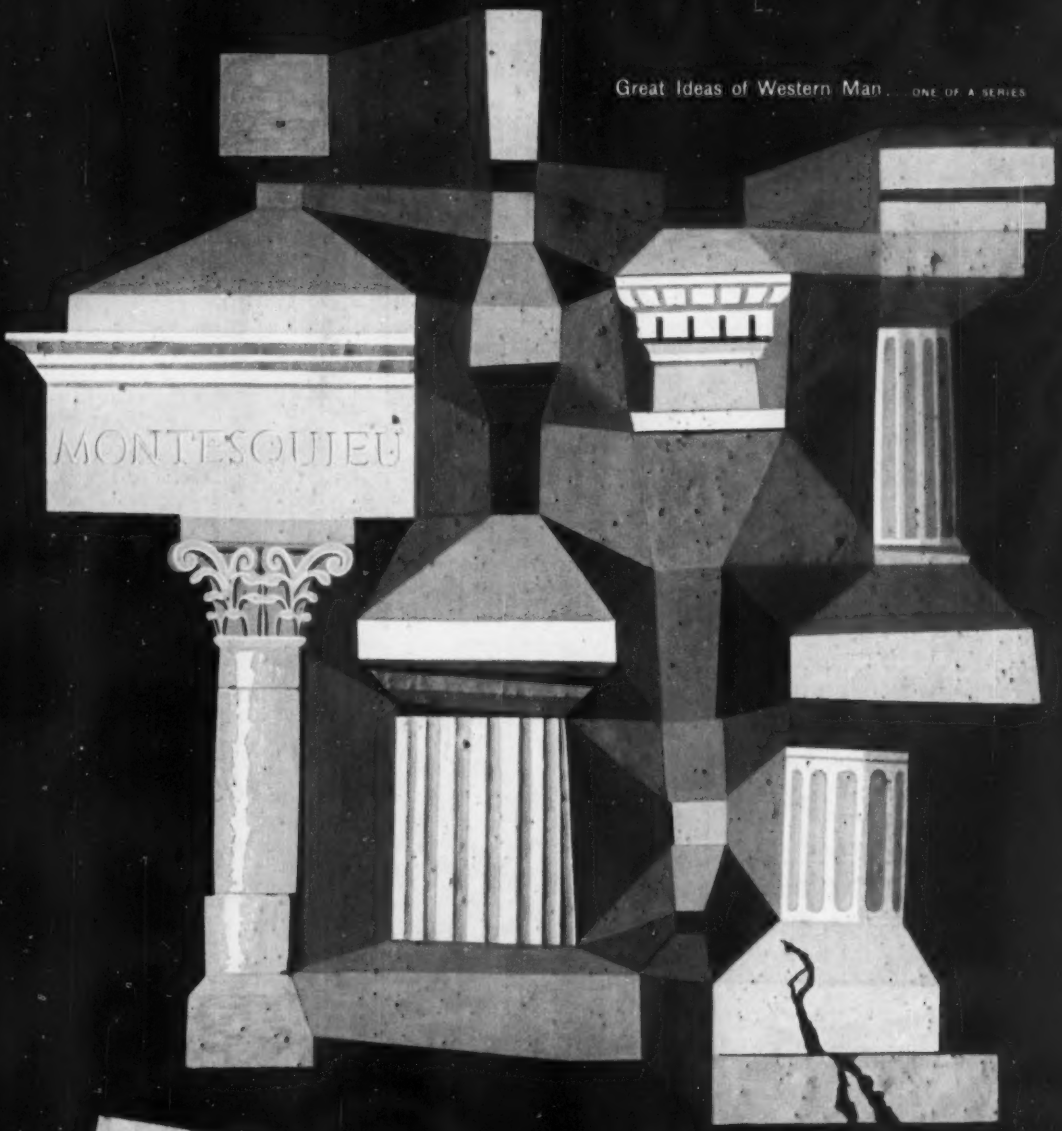

Artist: Lemuel B. Live

MONTESQUIEU on the duty of a citizen

The tyranny of a prince in an oligarchy is not so dangerous to the public welfare as the apathy of a citizen in a democracy. Spirit of the Laws, 1748

Reduce packaging costs and speed up production

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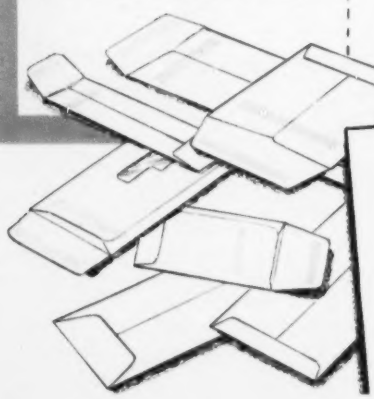

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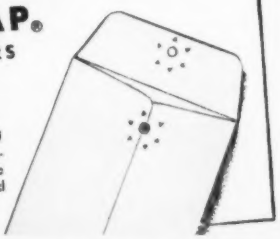

Thanks for Christmas...

Because it brings brightness to young eyes and laughter to young hearts.

... it gives pleasure to those who receive, and joy to those fortunate enough to give.

... it brings home closer to those far away.

... it comes as a happy benediction to ... we trust ... a well-lived year.

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... it retells the Greatest Story Ever Told.

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A NEW PACKAGING IDEA
at a new, low cost with NASHUA'S PERVENAC* Dry-Labeling Paper
NEW IMPROVED FITCH
NEW IMPROVED FITCH
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5¢ VALUE for only 2¢
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VOLUME 26
NUMBER 4
DECEMBER 1952

Modern packaging

Boom in aerosols

IT'S TIME TO TAKE ANOTHER LOOK AT THIS PARAGON OF CONVENIENCE THAT IS TURNING COMPETITION TOPSY-TURVY IN A DOZEN DIFFERENT FIELDS

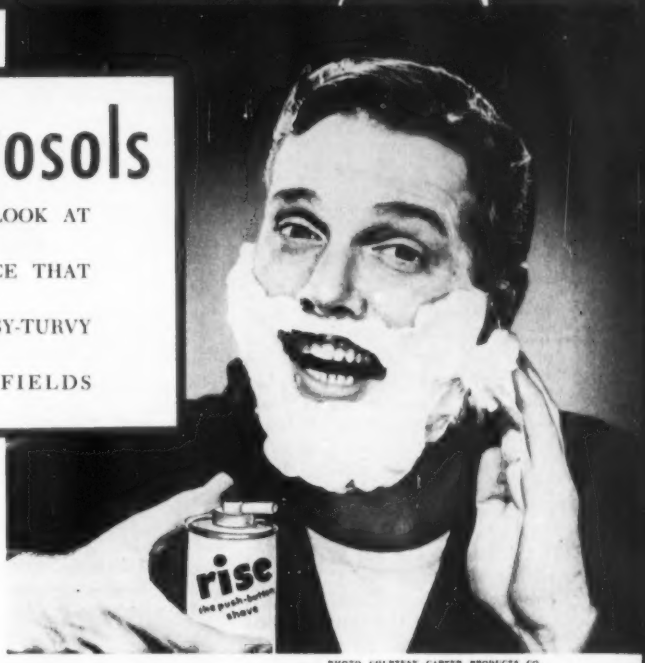


PHOTO COURTESY CARTER PRODUCTS CO.

MIRROR'S-EYE VIEW of a happy man who has discovered the convenience, economy and effectiveness of pushbutton lather. This item is expected to take 8,000,000 containers this year.

The aerosol can is one of two basically new postwar packages that by this time can be said definitely to have passed from the novelty stage into true stature as a standard package form.

The aerosol can, like the polyethylene squeeze bottle, unquestionably has a novelty appeal to gadget-minded Americans. Both offer convenience, which busy Americans love. But both of these new packages have demonstrated, beyond that, the ability to make certain products physically more effective, more efficient and more economical.

The ascendancy of the aerosol can particularly has taken some surprising twists and turns, as it has poked into first one product field and then another. Businesses have been made and broken on success or failure with the aerosol principle. The techniques of pressure packaging—usually handled by outside specialists—remain a mystery to many otherwise well-posted packaging men. The variety of cans, valves and caps now available seems bewildering. The name "aerosol" itself ("a suspension of fine solid or liquid particles in air") is now frequently a misnomer—but one so widely accepted that it seems pointless to quarrel with it.

For these reasons, and because there is scarcely a packager today who isn't—or shouldn't be—considering the advisability of putting some of his liquid products into aerosol cans, it seems high time to examine the whole field of pressurized packaging: where it has been, where it is going and what the considerations are in choosing an aerosol container and its fittings for any particular type of product.

It began with a bomb

It all started during World War II with the military aerosol insecticide —an ugly, heavy metal container that well justified the name of "bug bomb." It really took hold in the postwar civilian market with the development, from the beer can, of a cheap, disposable package that would hold almost as much pressure as the "bomb." Its most significant recent turn has been into the field of foaming or whipping of products, as distinguished from the true aerosol.

This year, it is estimated, approximately 100 million aerosols will have been filled and marketed. This volume is believed to be divided about half and half between food and non-food products.

Among non-food products, the insecticides still dominate; last year they accounted for more than half

PHOTOS COURTESY BRIDGEPORT BRASS CO.

DEVELOPMENT from the heavy wartime "bomb," which sold for $3.98 and had to be refilled to the one-shot beer-can container selling for under one dollar made aerosol insecticides everyday shopping items.

the non-food pressure-pack total. Room deodorants, with a volume about half that of insecticides last year, will probably retain their place when 1952 figures are all in. However, the percentage-wise dominance of the field by these two older product categories is rapidly being whittled away by the mushroom growth of a variety of newer products.

The fastest-rising star in the entire aerosol field right now is shaving cream. Ever since Carter Products discovered, about two years ago, that by using a different propellant they could produce push-button lather as readily as others had been making push-button whipped cream,* the leading makers of shaving creams have been falling all over themselves trying to get aerosol formulations and containers. The latest roll call discloses, in addition to the bellwether Rise, such big brand names as Barbasol, Palmolive, Mennen, Williams and Seaforth in aerosol cans. One authority of the pressure-packaging industry predicts that within a year shaving cream will be the biggest single product in this type of package.

Shaving cream illustrates the basic advantages of the pressure package, for in addition to the convenience of providing ready-whipped lather at the push of a button, the foamed dispersion is broken up into finer particles said to give a closer, cleaner shave—and when a 59-cent can produces 60 shaves it is thoroughly economical. It also illustrates one of the fine distinctions between products so puzzling in aerosols: You would think that shampoo could be dispensed in the same way, but the fact is that most shampoo formulations have failed because they are corrosive to metal, while shaving cream contains certain ingredients that inhibit corrosion of the container.

The one big aerosol item in the food field is whipped cream and other whipped dessert toppings. These products, while highly specialized, are probably the biggest single user of aerosol containers at present. A whole new technique in can coatings, valves and propellants—which later proved useful on shave cream—had to be developed for whipped cream. Distributors and retailers had to be taught to keep the product under refrigeration. But once the idea caught on it spread rapidly. No particular product-quality advantage is claimed for aerosol-whipped cream, but it represents a prime example of convenience.

Hair lacquers are the second largest group in the personal product category at present. A variety of shampoos, fragrance items, personal deodorants and anti-perspirants have been test marketed, but container corrosion, valve and formulation problems not quite solved commercially have for the most part prevented manufacturers in these fields from capitalizing on the lively demand they believe exists for these items in

THE BIG NAMES held back at first while newcomers tested the new-fangled package—but competition has swept them into aerosols, too.

* See "Jet-Propelled Lather," MODERN PACKAGING, Nov. 1950, p. 94.

PHOTO COURTESY DOUGLAS LABORATORIES, INC.

CONVENIENCE isn't the whole story. Fine dispersion of such cosmetic preparations as suntan oils and hair lacquers gives thinner, more uniform spread for better results. Note the special-mold plastic caps that hide the functional valve and lend feminine attractiveness to the Helene Curtis and Coppertone dressing-table packages.

suitable types of aerosol packages.

Unlike personal products, the paints are no longer troubled by unsolved container or formulation problems and production is growing rapidly. A volume of seven to eight million aerosol units by 1954 is currently predicted. The development of non-clogging valves, plus recognition of the fact that ordinary paint formulas would not do for pressure packaging, marked the real beginning of growth in this field. Consumers are showing a healthy interest, it is reported, after some initial disappointments sustained when users tried to paint entire rooms with the contents of containers adequate for touch-up work or the spraying of a few pieces of furniture. Manufacturers have also learned the folly of claiming 120-sq.-ft. coverage for a spray-can of paint which in the hands of the average consumer will cover only 60 sq. ft.

A good many of the paints now being marketed in aerosol packages are really nitrocellulose lacquers closely related to those used with commercial air-spray oufits. Several firms have been active in developing factory-finish, matched touch-up products for manufacturers of industrial equipment, household appliances, office furniture, etc.; these make it possible for dealers or maintenance men to touch up scratches in the finish sustained in shipment or in use, with far less trouble and expense than is required by a professional spray touch-up job. The automotive field is viewed by paint pressure packagers as a rich territory which will eventually be theirs; they visualize a can in every car.

Among the general household spray surfacings, clear acrylic or vinyl plastic sprays probably still lead the colored finishes. They are used to waterproof clothing, to put a tarnish-preventing clear coating over freshly polished silver or brass, or as a "fixative" for drawings and other art work. Formula improvements which deter precipitation in the can now permit aluminum or bronze versions of the plastic sprays.

The medicinal field has been slower to show growth, but aerosol vaporizers for the relief of cold symptoms are considered promising. Currently a topical anesthetic liquid for fast relief of pains of burns, abrasions or itching is being widely distributed in aerosol packages for medical use. Eventually, similar products for over-the-counter sale are expected to be developed.

A host of spray products are being aimed at the automotive market. These include spray lubricants, spray ignition-wire waterproofers, and spray versions of chrome protectors, waxes and upholstery cleaners.

In its early phases, the aerosol container was a novelty package that was seized upon to create new businesses or new lines of products for companies like Bridgeport Brass and Bostwick. Now, no longer a novelty, the aerosol is in the phase of taking over long-established products whose makers have found that they can benefit from the pressure dispenser's tremendous convenience appeal.

For example, there is Boyle-Midway, Inc., division of American Home Products, which has adopted aerosols for 14 of its 117 household products, using, it is estimated, several million cans a year. The company's aerosol products include Aero-Shave, three room deodorizers, Make-It-Snow, and aerosol put-ups of such long-familiar products as 3-in-One Oil, Black Flag, Fly Ded and Antrol.

It took only normal merchandising acumen to recognize the value of the new packaging technique in many diverse fields, but in some cases the technical obstacles to application of the idea were considerable. However, with each new type of product pressure packed, the experience and knowledge of suppliers to the field has grown, to the advantage of the late comers.

Containers and formulations

The basic laws of chemistry and physics, supplemented by special Interstate Commerce Commission rules to protect the public safety, govern the choice of a pressure package for any given product. In some cases, these considerations will veto the whole project. The technical problems of the pressure package can become more involved than most packaging situations, and the cost of surmounting these problems can be prohibitive. The manufacturer who assumes that the introduction in his field of a pressure-packaged product,

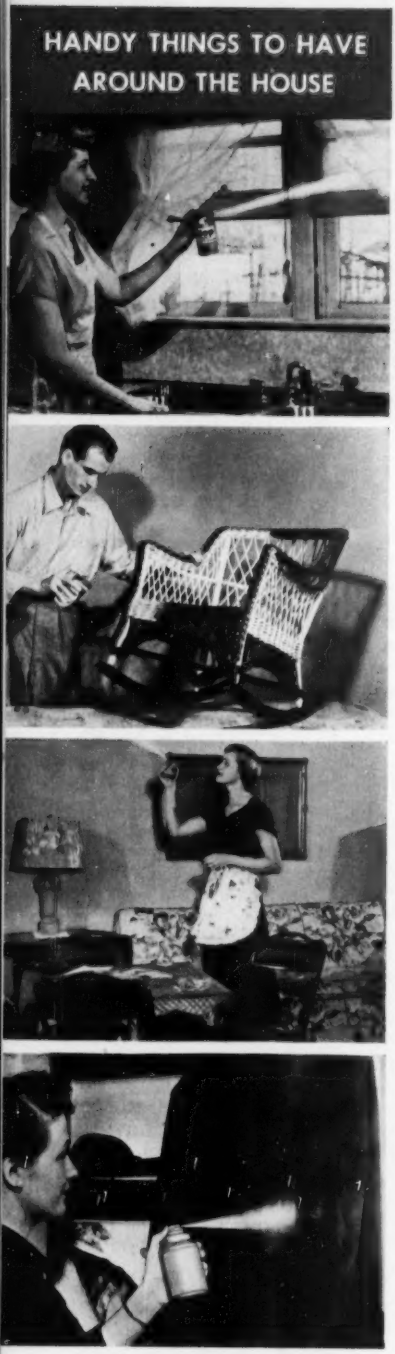


PHOTO COURTESY BOTWICK LABORATORIES

LIFE IS MADE EASIER by aerosols that kill insects, touch up marred furniture, freshen the air and mothproof clothes.

possibly a closely competing product, means that his own product can be easily and cheaply packaged in a similar container may be cruelly disappointed. Modification of formula to obtain good pressure-package performance may have to be so extensive that only the trademark, color and perhaps aroma of the original product can be carried over. The competing product, on the other hand, may very well be a new one developed from the ground up with pressure-pack requirements in mind.

The type of situation outlined above explains one reason for the lag sometimes observed between the appearance of the first aerosol package in a field and the answer to the challenge by established brand names in the field. Another obvious reason, of course, is that the others may have been letting the newcomer test consumer reaction to the whole idea.

Formulating for aerosol dispensing requires achievement of a balance among numerous properties: On the physical level, the product's viscosity and the propellant's pressure must be matched to the proper valve to obtain the desired particle size. This physical balance must be obtained, moreover, in a formulation which is chemically compatible with the propellant and which will in most cases form either a solution, a suspension or an emulsion with the propellant. Finally, all materials of the container and valve which will be in contact with the product must be compatible and non-reactive.

A completely hypothetical example may be useful. Let us suppose that you have a water-based product which you wish to dispense as a wetting spray. Some of the most commonly used propellants will produce only a foam when used with a water-based product—but by using alcohol as a co-solvent the desired wet spray might be produced. For some non-food products this might be a satisfactory answer, in so far as the product itself is concerned, but it could introduce serious problems of container corrosion. This problem, in turn, might be lessened in part by choosing a less-reactive alcohol, such as isopropyl or benzyl rather than ethyl, and by selecting the most stable propellant which would at the same time produce the desired pressure. However, the propellant with the desired stability might turn out to be one which produces a pressure higher than is desired, and in such a case it might be necessary to add certain organic solvents specifically for the purpose of taming the pressure.

If this sequence of formulation changes produced a satisfactory product from the point of view of product performance, it would still be necessary to test it extensively for possible changes on aging and for corrosion with various container linings and valve-assembly materials.

There are many other problems, such as the tendency of some of the most useful propellants to form minute amounts of hydrochloric acid in the presence of water. This acid may create the conditions of an electrolytic cell within the container if certain combinations of metals are present, and here corrosion will be rapid. Products which theoretically contain no water have suffered when incidental water has been introduced in impure ingredients or has been picked up during the filling process. Dehumidifying chambers built around filling heads or cork insulation for filler nozzles are among the devices adopted by operators to eliminate incidental or condensation water within aerosol containers.

Where water is a necessary ingredient, as in some shampoos, the hydrolyzing action described may be counteracted if soap is part of the formula; synthetic detergents, on the other hand, are said to be ineffectual in this respect. Even with soap, trouble may be encountered if alkalinity is too great; too much soap can lower the surface tension of the water to the point where the water itself, and not acid, becomes responsible for corrosion of metal surfaces.

When an otherwise useful formulation has corrosive tendencies, it will be a question whether it is better to modify the product to eliminate the tendency, or to use a protective lining in the container.

Millions of packages of aerosol insecticides and space deodorants, for example, are packaged in unlined pressed-steel containers, but their satisfactory performance is predicated on complete absence of water and non-reactive ingredients in the product. A large percentage of the containers in use today are of tinplate exactly the same as that used for processed-food cans. Improved tinplate soldering, to avoid exposure of steel at the seam, has eliminated

some problems. Non-aqueous products which will attack unprotected steel may often be held safely in an untinned can lined with a chemically resistant lacquer or enamel. Aqueous products such as shaving creams may require both a layer of tin plus the resistant lacquer. Whipped cream and other food products may be packaged in enamel-lined containers; in certain cases these products require a sanitary-type enamel coating plus a purified, odorless microcrystalline wax.

There are some products, for which pressurized spraying would be advantageous, that apparently cannot be held in metal at all. Here glass obviously suggests itself, and there are indications that after long effort the hazard of breakage in pressurized glass containers and the problem of leakproof valve fitting are on the road to solution. Bristol Myers claims to have licked the problem theoretically and has turned its findings over to a glass-container manufacturer for commercial development. Even closer at hand is a well-known spray product that will use a paper-jacketed glass bottle, under relatively low pressure, and an all-plastic valve to prevent corrosion by its aqueous solution.

FORMULATION of the product must be carefully fitted to container, valve and propellant. Here a research worker checks the character of foams produced by various formulas.

PHOTO COURTESY DU PONT

Valves

It was formerly the practice for aerosol container manufacturers to supply caps or lids with valves already attached, but it has become increasingly common for containers and caps to be supplied without valves, permitting the loader to select a valve from the large and still-growing variety now being offered by manufacturers who specialize in this particular field.

The spray range, particle size and other in-use characteristics of an aerosol product, as in the beginning, still depend basically on the product's density and viscosity, chemical nature of the propellant and propellant pressure. However, the efficiency of the valve will determine performance to a considerable extent, within the limits of the formulation.

Requirements for a pressure-package valve are well-outlined in the following check list. The valve must: (1) provide a seal against leakage until the product is completely dispensed; (2) be constructed of parts that will not corrode, swell or be dissolved by the formulation; (3) permit easy charging with a minimum of gas loss, if pressure loading through the valve is to be employed; (4) produce maximum volume of formulation on discharge (if a foam) or the desired droplet size; (5) prevent clogging of valve in use; and (6) provide easy, trouble-free operation by the consumer.

Valves are variously designed today to produce everything from a foam to a "soft mist" suitable for a cologne to a strong, fine spray suited to a suspension product which must travel through the air until the propellant vehicle has evaporated.

SHAVERS find a variety of brands, old and new, urging them to throw away the brush and discover the convenience of a pushbutton lather. This is a representative group of competing brand names.

Only close cooperation between those responsible for the formulation and valve suppliers will determine whether or not the desired in-use characteristics can best and most economically be obtained by a special or modified valve, or by formulating the product to obtain optimum results with a manufacturer's standard valve. Obtaining effective sealing without using so strong a spring as to make dispensing difficult for the user is another problem of valve design.

Recent basic improvements in valve design include: (1) development of non-clogging valves for quick-drying products and for products like paints which have suspended particles; and (2) use of new materials in valve construction to eliminate valve corrosion, swelling of gaskets, etc. One anti-corrosive valve is composed entirely of nylon, with the exception of a valve cup of high-grade tinplate and a stainless-steel spring. Some valves for paints are designed so that they can be cleared by the user if clogging does occur. A ball of metal or porcelain in some aerosol paint cans serves to stir up settled-out pigments as the can is moved.

A number of Government specifications for aerosol packages for military use now include the requirement for a hermetically sealed valve. Several valve manufacturers can now supply such valves, usually by provision of a puncturable metal diaphragm as an extra valve component. It is believed that the Government had long storage primarily in mind when writing this specification. For general use, it has the disadvantage that the loader is unable to test each container after filling. Advantages are protection of valve components from corrosion or leakage during pre-use storage.

Propellants

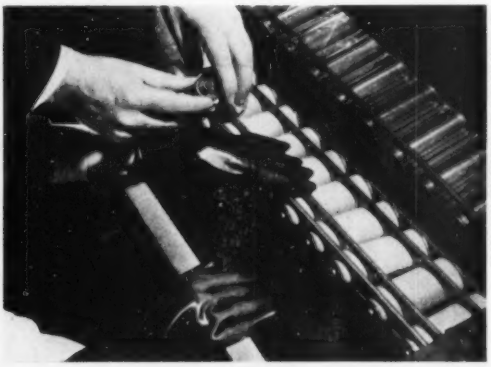
Propellants for non-food products in general use today are mainly liquefied halogenated hydrocarbons, such as Freon, which "boil" at room temperature to produce the vapor pressure which is used to force the pressure-packaged product from its container. Pressure or chilling puts these substances into their liquid state: therefore, either a closed pressure-filling system or a refrigerated system must be used to handle them on the filling line.

When refrigerated to sub-zero temperatures, these propellants liquefy and may be handled in the open like any liquid, so that this filling technique is generally fastest. However, some formulations are damaged by low temperatures and must be pressure filled. Pressure filling is usually done through the container's valve, after the active ingredients have been filled and the container has been capped; this requires a valve designed to permit such filling with minimum gas loss. Today pressure filling is being adopted by some loaders for a few products formerly refrigeration filled, partly because of difficulties encountered in keeping condensation water out of the fill during refrigerated filling.

Several different propellant compounds are often combined to pro-

Special techniques in production

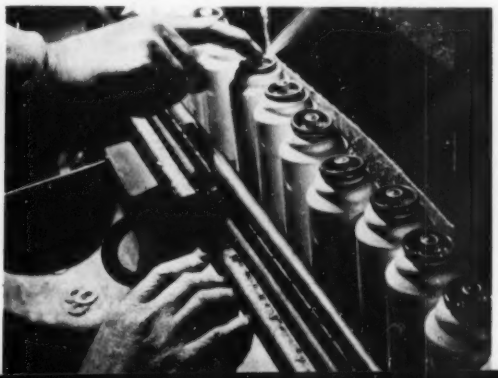
TWIN FILLERS, with contents chilled to minus 30 deg. F., squirt the propellant and product into cans as they pass on the conveyor at 60 a minute. Caps with valves are immediately applied and the cans then go through a hot-spray tunnel to raise temperature to 130 deg. and build up pressure temporarily to 150 p.s.i.



PHOTOS COURTESY BOSTWICK LABORATORIES, INC.

LEAKERS are spotted by running the line under water.

VALVES are checked by actual testing of each on line.



duce a material tailor-made for dispensing a given product formulation. In general, it is the nature of the propellant or propellent solution, rather than the amount used per container, which determines pressure. The amount of propellant used, on the other hand, has an important bearing on whether the product is discharged as a wetting spray or as a fine mist.

It is often satisfactory to complete a product formulation and then submit a sample to the propellant supplier, who then makes tests to select the propellant, or combination, that produces the proper type of dispensation. However, the relationship between propellant and product is intimate; to produce a fine spray or mist, the propellant and product must be capable of forming a solution so that the propellant, changing from liquid to gas as the product leaves the container, literally "blasts" the product into minute droplets.

In the ideal situation, the product manufacturer will have consulted with his propellant supplier while development of the formulation is still under way, thereby side-stepping undesirable reactions, instead of having to go back and rework a product to eliminate predictable incompatibilities or corrosion. It should be pointed out that corrosive effects can be insidious inasmuch as they may appear only after prolonged shelf testing, and certain products have been on the verge of wide distribution in aerosol packages when the presence of some such disastrous shortcoming became apparent. In some cases, manufacturers have learned of container corrosion and other delayed-action shortcomings of their pressure-packaged products only through retailer complaints.

Non-food products dispensed as foams utilize a propellant in emulsion with the product rather than in solution. Whether the product and propellant form a solution or an emulsion when mixed depends on the nature of the product itself; therefore, the ability to foam and the character of the foam are largely up to the product.

Liquefied gas propellants have not yet been recommended to be used for food products. Several of them are believed to have so little taste and toxicity that their use would be theoretically possible for foods, but refinements and a great deal of testing may be required before use of such a propellant for food will be permitted.

The currently marketed pressure-packaged foods, such as the whipped dessert toppings and whipped creams obtain their pressure and the whipping-dispensing effect from nitrous oxide or carbon dioxide gas, which is pumped into the container through the valve under pressure after the product has been filled. Some of the gas dissolves in the product, while the rest fills the head space under pressure.

It has been impossible to obtain a spray dispensation with these dissolved gases, because it is impossible to dissolve enough of the gases in the product, within the practical pressure limits.

Merchandising considerations

In pressure packaging more than in most packaging techniques, merchandising considerations are likely to become bound up with technological problems, because this is a package with built-in action. The quality of that action, even more than the appearance of the container, can be the dominating merchandising fact.

A most notable and perhaps inevitable feature of the pressure-package field is the pronounced similarity of package appearance among widely different products. Cosmetic items, foods, insecticides, paints and cleaners may all be seen displayed in identical cans with identical caps and even with not-very-different label treatments. Naturally, the strongest and most economical ally of the package designer trying to minimize this resemblance without using a special container has been color.

Practically all pressure-pack cans sold in any volume today are lithographed, and this technique of course gives unlimited opportunity for color and design.

The soft pastel colors usually associated with cosmetic items can help to set them apart for what they are, and several cosmetic firms have recently adopted opaque, molded-plastic slip caps to serve the double purpose of decorating the can while hiding and protecting the valve. Examples are Helene Curtis' peaked-dome cap done in a flower-petal motif and molded in colors exactly to match the can; and the yellow, helmet-shaped cap on Coppertone Sun Tan Oil, which has molded in it a replica of the Indian-head trademark. Most of the shave creams, such as Barba-

(*This article continued on page 198*)

PHOTO COURTESY TENNESSEE EASTMAN CO.

STACKING for display and protecting valves are simultaneously made possible by this unusual molded acetate cover.

From A to W

Among the products that have been pressure packaged:

ADHESIVE SPRAYS
ANTI-STATIC SPRAYS
ARTIFICIAL SNOW
ATHLETE'S FOOT PREVENTATIVES
BLOW-TORCH FUEL
COLD PREVENTATIVES
DESSERT TOPPINGS
DEODORANTS
FERTILIZERS
FIRE EXTINGUISHERS
FUMIGANTS
GUN OILS
HAIR DRESSINGS
HOSIERY SAVERS
IGNITION WATERPROOFERS
INSECTICIDES
MOTHPROOFERS
PAINTS AND LACQUERS
PERFUMES AND COLOGNES
POLISHES
REFRIGERATING GAS
RUG AND UPHOLSTERY CLEANERS
SHAMPOOS
SPOT REMOVERS
SUNTAN OILS
WAXES
WATERPROOFING LIQUIDS
WHIPPED CREAM

A *folding*

STRIKING APPEARANCE is provided by truncated pyramid and Bloomingdale's distinctive copper and silver striped private-design cover paper. Consumer tests reveal overwhelming approval of the form, which establishes strong store identity.

When is a set-up box a folding box? When you want it to be badly enough, according to Bloomingdale Bros., New York department store. A new "tapered" box combining the features of both a set-up box and a folding carton adopted by Bloomingdale's appears to be the solution to many department-store gift-packaging problems. It may also be of interest to many packagers in the manufacturing field.

The new container is best classified as a set-up box, since the visible lid portion is of set-up construction and is fabricated on set-up box machinery. The base, however, is of folding construction. The secret of its efficiency is the shape of its rigidly constructed lid—a truncated pyramid, providing sloping sides for nesting purposes that save storage space and also add strikingly to the appearance of the package.

There are several reasons why retailers have long been in the market for a gift box that combines the features of both the set-up box and folding carton.

In the packaging of many soft-goods items as gifts, the cost of the package often shaves narrow profit margins still closer. Bloomingdale's and other department stores—which all do a great deal of this type of packaging, particularly at Christmas—have been anxious to find a good paperboard container that would do an effective job at lower cost.

Traditional set-up boxes take a great deal of room right at the point of purchase and most stores have instituted wrapping desks to get them away from the sales counters, where all available space is needed for product storage and display. A gift box capable of self nesting in the same size, Bloomingdale reasoned, might be the answer. Sloping sides might turn the trick.

Wrapping desks could then be better organized and in some departments dispensed with entirely except during peak periods—with wrapping done right at the merchandise counter. Customer convenience would also be served in this way, for often the shopper must make her selection at one counter and take it to another for packaging.

Bloomingdale's, after surveying developments in this country and abroad, came up with the basic design. Originating with the user, who was in an excellent position to recognize the values that would have to be built into a new container, the new box incorporates many of the essentials demanded from the user standpoint—smart appearance, compactness in storage and efficient performance in the packaging operation.

After the design had been worked out, it was taken to a supplier, who was

set-up box?

BLOOMINGDALE'S SMARTLY TAPERED, NESTING CONTAINER IS PARTLY BOTH,

AND POINTS TO NEW ECONOMIES IN BOXING GENERALLY

asked to try his skill at producing the box, either on existing equipment adapted to do the job or with new machinery—and at lower cost than that of the set-up box then in use.

With the exception of certain mechanical alterations to meet the requirements of mass production, the finished box is essentially the same as that of the original design. The boxmaker was able to solve all the technical problems involved by adaptation of existing machinery, at a cost reported to be economically feasible to himself and to Bloomingdale's.

The box is made of two pieces of paperboard glued together to form the effect of a hinge-lidded box when closed. The base is made from a folding grade of boxboard laminated to silver-colored paper. It is die cut on a platen cutting-creasing press. The lid is made of chipboard, also die cut, formed by a quad stayer and glued. The cover paper for the lid is Bloomingdale's private-design stock in alternating silver and copper strips. The cover paper is applied to the lid by a standard box-wrapping machine adjusted to perform this operation on the new trapezoidal shape. The lid is glued to the base in a separate mechanical step.

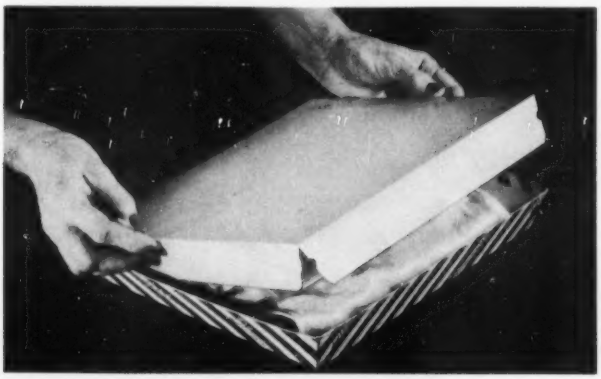
The box blanks have irregular-angled corners which are necessitated by the sloping sides of the construction. A locking device is die cut in lid and base. This lock accounts for the solidity of the structure in use. It is reported to fasten securely so that tying the filled box is unnecessary except as an extra touch added at the customer's request.

Development work was undertaken about two years ago to work out complete details of construction and machinery adaptation. In the spring of 1952 the box was a mass-production reality exhibited at the annual convention of set-up box manufacturers in Chicago, where it won honorable mention in the annual competition for superiority of construction.*

Refinements are still in progress to broaden the range of application. By increasing the number of sizes in which the carton can be manufactured, Bloomingdale's expects that more items in all lines of soft goods may be packaged in the new containers.

* See "Set-up Box Winners," MODERN PACKAGING, May, 1952, p. 134.

STACK OF 50 tapered boxes is shown next to 50 regular two-piece set-up paper boxes piled one on top of another, illustrating the saving in space achieved by the new container. Savings in storage space have been reported as high as 70%.



EASY HANDLING permits sales people to lift box off a stack, fill and fold it shut in a matter of seconds. Die-cut tabs and slots assure automatic locking. In several instances this facility in handling eliminates the need for separate wrapping desks.

Right now Bloomingdale's has placed three sizes throughout the store. These are being used as gift packs for women's lingerie, infants' wear, linens, towels and other "domestics," blouses and women's wear accessories and some men's furnishings. The company feels that many more items may eventually be packaged in the new boxes.

The space-saving factor is illustrated by experience in Bloomingdale's lingerie department. Formerly gift wrapping for this department had to be handled by a separate wrapper-manned desk taking up valuable selling space. With the institution of the new box in three sizes in the department, it was possible to return the wrapping operation to the saleswoman.

The cartons are stacked atop the stock stacks behind the sales personnel. When a sale has been completed, the saleswoman reaches up for a box, which she lifts off the nested pile in one motion. She packs the merchandise into the lid of the box, folds the base into the lid—where the lock feature secures top to bottom—and turns the box over right side up. The whole operation takes only a few seconds.

The locking construction enables a clerk to learn quickly how to box an item at maximum efficiency and the average salesgirl can be counted on to do the job so easily that it is not necessary to divide the sales and wrapping functions to insure trim packaging.

Bloomingdale's reports that it is treating the new hybrid the same way that it has handled its set-up boxes for customer delivery. Where the latter required an outer paper wrap with taping or string tie, the new form is similarly protected. Where an outer bag will suffice the set-up construction, it will also be used on the tapered package. The company has already experimented with out-of-town mailings and has discovered that the same outer packaging required for the set-up box is adequate for the new container.

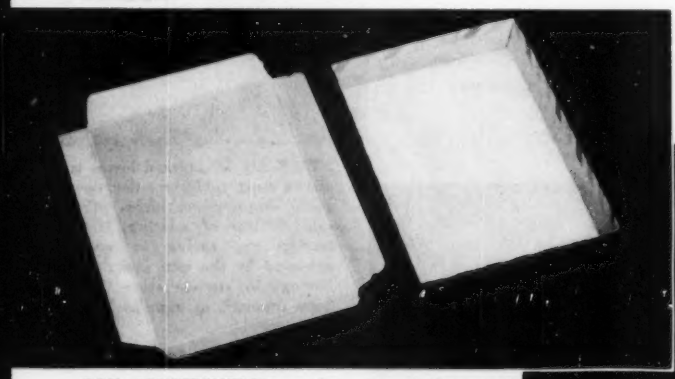
The new box has certain limitations for special sizes, such as for handkerchiefs or neckties, where the pyramid slope does not achieve sufficient depth to lock. Likewise, the box of nearly square measurements on all sides probably cannot be replaced by the trapezoidal shape with equal performance and greater economy.

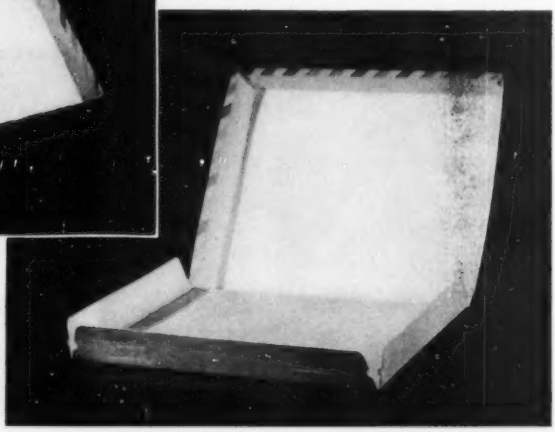
Bloomingdale's reports, however, that the new construction might eventually be adapted to the larger sizes needed for women's dresses and suits, such as those used in the Green Room, the store's quality ready-to-wear department for women, where the most elaborate boxes are used to package every purchase.

As shipped from supplier to the store, the boxes require no special interior protective packing. They are placed in a paper-taped corrugated box, half of them nested in one direction and half in the other—the folding base stretched out flat in line with the rim of the lid. The fact that 100 of the tapered boxes can be stacked in the space required for about 30 conventional set-up boxes of comparable size gives the retail user the convenience and space-saving advantages he needs at the point of end use. In shipping and warehouse storage, however, these advantages are multiplied. As few as 12 of the old set-up boxes, or 24 when nested, were handled in actual practice at Bloomingdale's compared to 100 of the new boxes. This means considerably less trucking activity at a vital point and also saves warehouse space where storage facilities are limited and box deliveries may be infrequent.

Already the box is in use in other cities throughout the United States and in Canada, although Bloomingdale's has exclusive rights to it in the New York metropolitan area. The container also appears to have possibilities for manufacturers of confectionery, jewelry, apparel and other types of merchandise that require economical decorative boxes. Patents are pending in the U.S. and in Canada.

CREDITS: *"Taper-Pak" boxes for Bloomingdale's fabricated by the C. Albert Sauter Co., Inc., Water & Jackson Sts., Philadelphia 48, Pa.; distributed by Poland Bros., 305 S. Sharp St., Baltimore, Md. Bloomingdale box papers by Lachman-Novasel Paper Corp., 109 Greene St., New York 12, N. Y.*





BOX CONSTRUCTION consists of a rigid tapered lid made on set-up box machinery and glued to a folding-box base. A lock is provided by a tab on the base which engages automatically, as the box is folded shut, with slots die cut in the lid. Result is a box with the strength and appearance of a set-up box but having much of the compactness and convenience of a folding construction.

COLORFUL decalcomanias meet Kidmetics' need for low-cost special-character decoration suited to mass production. Decals will not rub or chipp off the bottles.

PEEL-OFF of special backing paper is clean and easy. It leaves perfect three-color decal which is protected by lacquer coating. Through use of a special solvent, lacquer is transferred with the decal. Drying time is only five seconds. Later on, an air jet may replace hand stripping.

Decals AUTOMATICALLY APPLIED

KIDMETICS PIONEERS A NEW METHOD OF DECORATING BOTTLES BY ADAPTING A PAPER-LABELING MACHINE

The three-color, circus-character labels now appearing on bottles of Kidmetics children's toiletries are neither silk-screen nor fired-on ceramic labels. They are decalcomanias—applied by machine, for the first time, on a standard labeling machine.

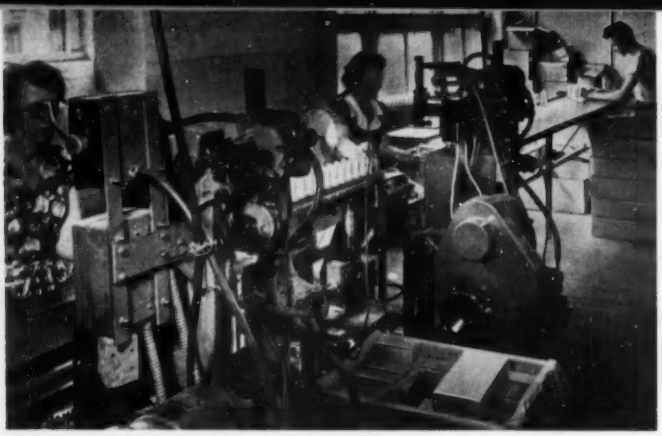
The development, in which a decalcomania manufacturer and the labeling-machine maker joined forces, appears likely to open up a whole new phase of glass decoration—one which can be handled readily in the packager's plant, as a step in the packaging operation. It involves only a special type of decalcomania transfer—one which gives remarkable adherence and permanence on the bottle—and a few special parts for the labeling machine.

The operation is now a routine one in the Brooklyn plant of Associated Brands, Inc., producer of Kidmetics. The labeling machine used is basically identical to that used by Associated Brands to apply its paper back-label on the Kidmetics bottles and in practice the two semi-automatic machines—one for decals and one for paper back-labels—are set up in tandem, with bottles traveling from one to the other in a continuous-line operation. The decalcomania stage in this tandem matches the paper-labeling stage for speed and its operator requires no special training.

The new technique is made possible by three special features:

1. The carrier or transfer paper of the decalcomania is of a special type which can be readily peeled off by hand, or even blown off by an air jet, as soon as the special solvent solution has dried. If transfers are applied just before bottles enter the filling-capping line, the papers are ready to be stripped off just before the bottles enter the cartoner. The papers can be stripped any time after five seconds.

2. The special solvent release solution is applied to the decal simply by replacing the glue roller of the labeling machine with a specially felted roller which achieves the necessary thorough and uniform appli-



LABELING LINE at Associated Brands uses two labeling machines, basically identical. The first applies the paper back-label; the second, the decal. Bottles then move to the filling and capping line.

cation of solvent to the transfer paper. The labeler in use on the Kidmetics bottles also has its straight pressure device, formerly used to press a glued paper label tightly against the bottle, replaced by a roller which passes across the surface of the transfer paper, "ironing it out" into uniform and thorough contact with the glass.

3. Enamel-like inks used in the decal itself produce a design which is quite durable in service, remarkably resistant to scratching even in narrow salient portions of the design and able, it is said, to take all the soap-and-water wetting they are likely to encounter during use. The design will peel away clean and largely intact after soaking in very hot tap water, indicating possible usefulness of the technique for removable labeling on re-use containers.

Due to a clear lacquer over-coating, which is part of the decal, these labels are claimed to be more resistant to alcohol than any cold-color-applied labeling used up to this time. In the manufacture of the decals, the clear lacquer is first printed onto the special release paper; the lacquer transfers and releases with the colors on application by the machine.

The attempt to adapt a paper labeler to application of decalcomania transfers was begun experimentally early in the spring of this year in the Associated Brands plant. When this pilot operation, with most of the kinks and bugs ironed out, was first advanced to a commercial scale about four months ago, Associated Brands' President H. Bruce Hagler considered his earlier enthusiasm well justified in terms of uniform quality of the bottle decorations, drastic reduction of container inventory requirements and problems, and a saving in costs which he expects to be "considerable" as large-scale production on the Kidmetics line settles into a smooth routine. Previously, silk-screen labels of similar design had been used.

Kidmetics, "Toiletries for the 4 to 14 Set," is a children's line of six toiletry items acquired by the 30-year-old Associated Brands firm about two years ago. The new line fits snugly into the business, which already included a nationally distributed line of men's toiletries under the West Point trademark and the nationally retailed Delettrez beauty preparations, plus private-label work. Associated Brands repackaged Kidmetics in a 6-oz. square private-mold bottle with finger-grip sides and a cross-section of a size a small child can grasp.

The design keynote of Associated Brands' new package for Kidmetics was a large, brightly colored, cartoon-style figure silk screened on the flat front of the bottle; figures such as a clown, dancing elephant, dancing pig, giraffe, lion tamer, etc., were selected to identify each of the products and to arouse children's interest. Display cartons for the line were designed with large die-cut open windows so that the silk-screened cartoon figures on the bottles, highlighted against the various colors of the bottle contents, would dominate the packages even when display cartoned. The carton cutout type of decoration was chosen to allow a large figure to be used and still permit the color of the bottle contents to be seen.

After national distribution of Associated Brands' full Kidmetics line had been obtained through drug wholesalers and chain and department stores, the need for steady high-volume production was apparent. Labels had to have a cosmetic look, yet be adapted to straight-line mass production.

Word of Associated Brands' problem passed in casual conversation from the company's bottle supplier to the labeling-machine builder. An executive of the machinery company had already become interested in the possibilities of adapting a new, experimental type of decalcomania transfer to high-speed machine application. These coincidences happily combined to produce the joint pilot-line endeavor which took machine decal labeling from the experimental to the commercial level in a few short, but lively months.

Mr. Hagler saw the idea as a means of eliminating in one step many of the problems which had been trou-

OPEN-WINDOW cartons for singles and 2- or 3-bottle sets complete the circus atmosphere while giving full display to colorful decals.

bling him. Instead of constant effort involved in building and maintaining a balanced inventory of bottles with the six different designs, it seemed to him that a successful decal operation might reduce the whole six-design, seven-color, bottle-decoration project to something hardly more complex than ordinary paper labeling.

Fortunately, the Kidmetics private-mold bottle provided a flat front surface for transfer application, which simplified the process, and the decorative designs, having been drawn for silk-screen application, lent themselves to reproduction in decalcomania transfer without difficulty. The difficulties came in matching the transfer and the special solvent formulation to the practical possibilities of rapid mechanical application.

As problems cropped up, they had to be met by close cooperation between packager, decal manufacturer and machine maker. The process demands more thorough application and more uniform pressure than glue.

At the end of four months, the process was close enough to perfection to allow limited commercial use, with a high percentage of usable bottles being produced. From then on, it was a matter of gradually increasing production until all requirements of the main Kidmetics bottling line were being consistently met. As was expected, each lengthening of the run for the new technique brought out new problems, but by this time attention could be concentrated on refinements.

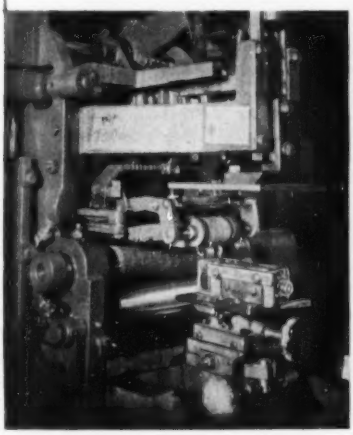
In the present Kidmetics production technique, bottles arrive in regular compartmented corrugated cartons from the bottle supplier on a schedule which sustains steady 100-gross-a-day bottling-line output without excessive inventory. On a schedule based on sales planning, bottles are given their proper paper back-label (copy differs for each of the six Kidmetics items) and the transfer decoration. Feed, connection and take-away from the two semi-automatic labelers are handled by continuous conveyor sections. Except for the fact that one of the two labelers (originally identical machines) has been converted to handle decal transfers, there is no particular difference between the operations. An operator merely places a bottle in the machine carriage; the label or decal is automatically picked up, applied and smoothed, and the bottle is removed by hand to the conveyor.

Labeled and transfer-decorated Kidmetics bottles move smoothly into bottle ready-storage at the head of the filling line to meet production schedules of the six different products. Associated Brands has four complete automatic bottle-cleaning, -filling and -capping lines. A batch of labeled and decorated bottles seldom remains in storage more than 24 hours.

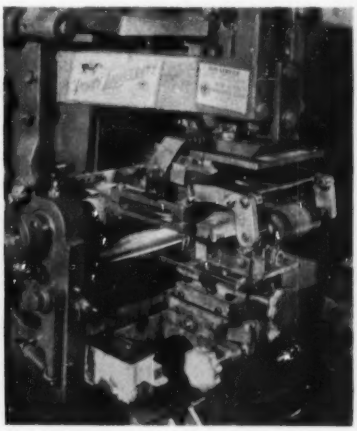
As bottles leave the capping machine, their dry and now loosely attached decal carrier papers are easily peeled off by an employee who, in the process, inspects the quality of the transferred design; thereafter bottles go on to be cartoned automatically. Those familiar with previous decalcomania techniques will recognize the ease of stripping as a significant point; earlier decal carrier papers had to be "slipped" off the surface sideways—the new ones can be pulled or peeled off straight-away with no particular care at all, once they have dried.

Now that the decal transfer technique has been perfected, plans are being made to hitch up the labeling and decoration stages more closely with the actual filling operation. This was impractical while the transfer process was still being tinkered with from day to day, but it is considered quite practical now and it would, in effect, eliminate the need for coordinating labeling and filling schedules. Drying will be expedited, it is believed, if one or two air fans and perhaps a small amount of radiant heat are provided along the filling line. Decal transfers will probably (*This article continued on page 207*)

Sequence shots show simplicity of operation



VACUUM PICK-UP mechanism brings paper-backed decalcomania forward and over the felted solvent roller.



LABEL CARRIER almost at end of forward travel about to release a solvent-soaked transfer on bottle.

ON RETURN TRAVEL, following roller presses transfer firmly and evenly on bottle.

PHOTOS COURTESY NEW JERSEY MACHINE CORP.

Packaging's Hall of Fame®

FORTY-SEVENTH OF A SERIES

Prince Matchabelli

PERFUMES

The fragrance of a lovely perfume is an elusive thing. It approaches reality when it calls to mind the visual image of a personality, a place or an occasion. But in the cold light of successful business, it must be given unmistakable reality through association with the visual image of a memorable package.

In the perfumery industry there is no more widely recognized package than the antiqued, gold decorated crown bottle used by Prince Matchabelli. Without a word—even without a visible label—it is the company's signature wherever it is seen. For more than 25 years, the crown motif has been an integral part of every package that bears the Prince Matchabelli name and, as such, is probably entitled to be called the most famous trademark in perfumery.

FOUNDER was Prince Georges Matchabelli, eldest son of noble Georgian family. His portrait hangs in the Crown Room.

The fact that this is one perfume business that started in the United States as a prince's hobby and *then* branched to France, England and other parts of the world is also unique. The reverse is usually the case.

There are still further reaons why Prince Matchabelli packages—twice winners of Charles S. Welch awards, highest honors in the cosmetic field, and winner in the 1952 national set-up box competition—have been chosen for this month's position of honor in *Packaging's Hall of Fame*.

The Prince Matchabelli company had one of the first successful molded plastic packages to be used on a large scale—the famous acrylic "block of ice" in which the crown bottle was suspended. It was first to popularize fragrance collection packages in miniature purse-size quantities and sold at popular prices. As the company grew, bath oil, colognes, powders, soaps, lipsticks, compacts, purse kits and most recently, solid colognes were added to the line, bringing new fame to the crown trademark. Prince Matchabelli also has always been a leader in striking novelty gift packages, such as its Christmas bells, miniature hat boxes and Easter eggs—pioneering a trend away from the older style cosmetic "set box" to the smaller units of two or three items that are so popular today.

A real, live prince

And the name, Prince Matchabelli, was no dreamed-up title of fiction. The firm of Prince Matchabelli, Inc., now owned by Vick Chemical Co., was founded by Prince Georges Matchabelli, the eldest son of a noble Georgian family.

Something of the founder's background is necessary to an understanding of the packaging story.

The Prince was educated in mining engineering in Germany so that one day he might assume management of his family estates in the south of Russia. He became proficient in languages so that he might tour Europe at intervals and one day serve in the diplomatic service of his country. In Sweden on one of these tours he met and married Norina Gilly, a distinguished actress known as Maria Carmi.

His career might have proceeded according to schedule except for the Bolshevik revolution which, in 1919, shook his homeland. His family estates were confiscated and, but for the fact that he was living elsewhere in Europe at the time of the revolution, he also might have been caught in the Maelstrom in which so many Russians of noble birth found themselves at that time.

But about the time the Prince and Princess Matchabelli were beginning to realize their desperate plight, something happened to change the course of their lives. Princess Matchabelli, as the actress Maria Carmi, had been playing the role of the original Madonna in "The Miracle," the religious spectacle play that had won such acclaim in Europe. When "The Miracle" was brought to New York, Princess Matchabelli came with it. And of course her husband came with her.

Not wanting to be known only as the Princess' husband and being of an enterprising nature, the Prince looked around for something to do in the new country. He opened an antique shop

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

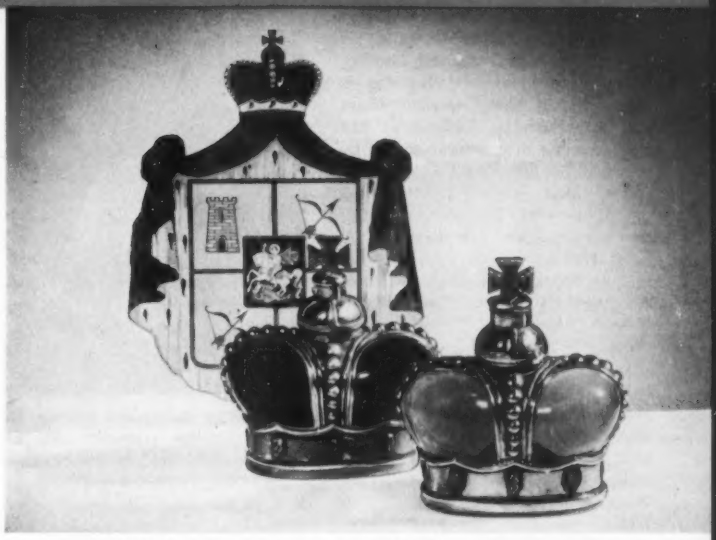
- **Sales success hitched to the glamour of a real, live prince has been teamed with the most practical of production and sales methods.**
- **Their gold-decorated crown bottle provided the most famous—and most lasting—trademark in this field.**
- **Their acrylic "block of ice" became one of the most notable applications of molded plastics in packaging.**
- **They started the industry's trend to fragrance collections in miniatures to bring good perfumes within the reach of everyone.**

on New York's Madison Avenue, calling it *Le Rouge et Noir*. Through his title and his charm, the shop quickly became a center for admiring socialites and theatrical celebrities.

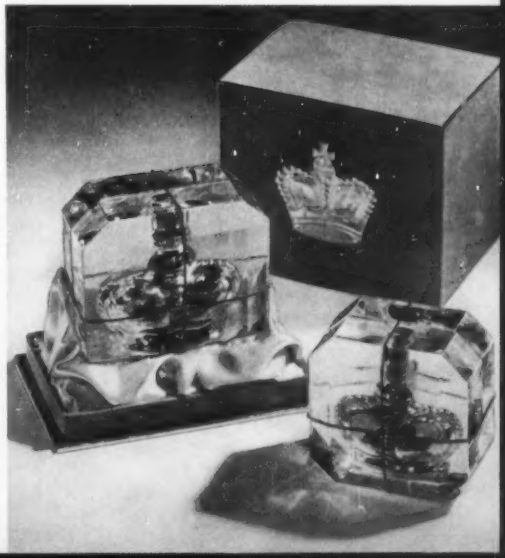
He also had a hobby of blending perfumes to express personalities—a talent that endeared him to American women who were flattered to have a real, live prince create a perfume for each individuality. In time the antique shop came to hold more bottles of perfume than furniture and bric-a-brac. Perfume became the sole interest. The antique shop was abandoned and he moved to a Fifth Avenue address where he could make more perfume. After a year as perfume consultant behind the counters of a fashionable specialty shop, he formed his own company in 1926 and became manufacturer, bottle designer, merchandiser and his own best salesman and publicity agent.

He himself was the designer of the crown bottle—an adaptation of the crown as it appeared on the top of his own family coat of arms—a crown motif that has become one of the greatest single assets of Prince Matchabelli, Inc. Within three years after the formation of his company, the perfumes in the distinguished crown-shaped bottles had distribution from coast to coast.

As business grew the Prince could no longer blend perfumes exclusively for individual personalities, but began creating fragrances to express various types of personalities, putting them in the regal bottle women loved and naming them after great ladies of history—"Duchess of York," Katherine the Great," "Princess Marie," and "Ave Maria" for the Princess Matchabelli's role as the Madonna in "The Miracle." He supplemented the line with bath oil, colognes, powders



CROWN MOTIF is an adaptation of Prince Matchabelli's own family coat of arms. It has become greatest single asset of the company and its signature everywhere. Original crown bottles were porcelain, imported from Germany. Photo shows original opaque ceramic bottle contrasted with present American glass bottle, gold decorated by hand.



ACRYLIC package—the famous "block of ice" in which crown bottle was suspended—represented one of first successful large-scale uses of a purely decorative molded plastic package.

MACHINE - MADE bottles all carry crown motif. Round flask is for popular-priced colognes. Sceptre bottle has long been used for bath oil and colognes. The "blown-up" crowns are for colognes matching perfume fragrances.

and a black-and-white lipstick case emblazoned with a golden crown that created a sensation in the trade. He opened offices in Paris and London.

He planned his next big step in 1935—elegant show rooms, offices and manufacturing facilities at 711 Fifth Avenue in quarters vacated by National Broadcasting Co., when its studios were moved to the then new Radio City. The new headquarters were designed and decorated by Cecil Beaton, famous English artist and photographer, and with a handsome portrait of the Prince, in full Russian regalia, by Pavel Tchelitchew.

But Prince Matchabelli never lived to see the opening of this showplace. He died in March, 1935, following a Western sales trip. For a time after his death the Princess Matchabelli served as president until the company was sold to other interests. Vick Chemical Co., the present owners, purchased Prince Matchabelli, Inc. as part of an expansion and diversification program in 1941, after studying its potentialities for more than five years. Without in any way changing the character of the product or package, Vick introduced modern production methods and improved selling techniques.

Through a continuation of the Prince's dramatic packaging policies and the concentration of promotional effort on a few items with the greatest sales potentials, the company continued to do well under the new management. Sales rose 115% the first year; 156% the second; 250% the third, and 417% the fourth. Despite the slump in cosmetic sales generally following the war, the company has maintained steady progress, reported to be better than the average in its field.

Most significant phase of the packaging history is the story of the gold-decorated crown bottle. The original ones were made of porcelain and came from Germany. They were used in several colors to designate different scents. During the '30s when it was no longer feasible to depend on imports, the bottles were translated into glass in this country. The original adaptation was made by Swindell Bros., since taken over by the Carr-Lowery Glass Co., although another firm is now making the gold crowns while Carr-Lowrey and two others

PACKAGES THAT STARTED TRENDS IN PERFUMERY FIELD

NOVELTIES introduced during the late '30s were forerunners of today's smaller cosmetic gift packages, starting movement away from old-style "set" boxes. Snowballs, bells, Easter eggs were popular.

1942 1947 1948 1952

MINIATURE HAT BOXES, holding purse-size crowns, have been among most successful cosmetic packages. First hat box was introduced in 1942. Illustration shows a few variations over the 10-year period.

FRAGRANCE SAMPLING through a combination package was pioneered years ago by Prince Matchabelli. Early one- and two-drawer set-up boxes preceded current Cologne Collection in rigid transparent box.

produce the company's machine-made bottles.

The gold-decorated bottles represent one of the finest examples of expensive, hand-made, commercial glass containers today and are used for all Prince Matchabelli perfume from ¼ oz. up. While they are blown by a semi-automatic process, each glass stopper must be hand ground and attached to the bottle which it fits.

The gold decoration and the antiquing must be applied separately by hand and fired on. When a second color is used, such as the blue to provide the opaque effect of the "Beloved" bottles, the blue must also be applied by hand and fired in a separate operation from the gold.

In addition to the gold-decorated crown bottles, Prince Matchabelli uses four types of machine-made, private-mold bottles: miniature crowns for purse-size quantities of perfumes and colognes; larger crowns for colognes: the company's distinctive sceptre bottles for colognes and also bath oil, sometimes with hand-applied gold, and round flask bottles with the crown emblazoned in the mold for the more popular-priced colognes.

Many of the machine-made bottles are equipped with screw caps that facilitate packaging production, but most all require some special handling, due either to their miniature size or the decorative treatment of the closure—such as the cross on the top of glass-stoppered flasks or the attached decorative cross on the screw caps for the sceptre bottles—which cannot be handled on conventional capping equipment.

Packaging in the beginning was of necessity a hand operation, and never in history, perhaps, was there a more regal production line. Employees still with the company remember those days. Princesses, countesses and baronesses—all friends of the Prince and, like him, refugees from the Russian revolution—filled the crown bottles, applied the "fish-skin" seals and exercised their creative talents in tieing ribbons and bows. When big orders came in, everybody pitched in right up to the Prince himself. Salesmen, who were also frequently counts and barons, rolled up their sleeves and helped mold soap and grind sachet powder. The factory was like a setting from a Tolstoy novel.

Gradually with the growth of the company, the atmosphere has changed—yet even today the packaging requires a great deal of manual labor to preserve the decorative details of the package forms that have made the company famous.

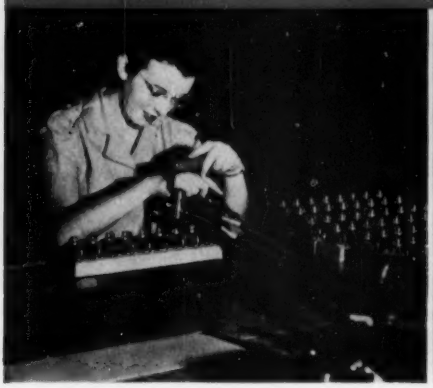
When Vick Chemical Co. took over, it made no drastic changes in policy or personnel, but immediately transferred an expert Vick's production man to find out where economies could be made by streamlining the operations. Through these studies has been developed one of the most modern set-ups for the packaging of perfumery. The company's plant at present is in Bloomfield, N.J., established in 1946 when all manufacturing facilities were moved from 711 Fifth Avenue.

The crown bottles are filled by a hand-operated vacuum filling head, but the closing operation is facilitated by the use of jigs to hold several bottles at a time which can be passed to an operator who assures that the hand-placed glass stoppers are secured by a tightening device developed by company engineers. The bottles are then ready for the "fish-skin" seal, known in the trade as *baudruche,* which is translated in a French dictionary as "gold-beater's skin," and derived—not from fish as its name would imply—but from animal membranes, principally sheep. No automatic method has been discovered for applying this traditional film used in fine perfumery packaging for its efficiency in providing an almost invisible seal between bottle neck and

CROWN ENCRUSTED lipstick and compact cases, handsomely boxed, have always drawn shoppers to Prince Matchabelli.

BOXING STYLES are illustrated by two variations. Horizontal box is used for larger sizes. Upright box in foreground is now favored for better display of crown bottle.

SHOWMANSHIP in the grand manner has put over the crown bottle. Here is Pahlmann-designed Crown Room, opened in 1946 to celebrate company's 20th anniversary and to introduce "Crown Jewel" perfume.



HAND-OPERATED vacuum filler was developed by company for gold-decorated crowns. Glass stoppers ground to fit each bottle are inserted by hand, tightened by company-designed device.

DEXTROUS WORKERS cut and apply "fish-skin" seals, then golden cord around bottle necks. No automatic method has been devised for applying this traditional sealing film derived from animal membranes that is used in fine perfumery packaging.

ground-glass stopper. After sealing, a golden cord finish is added to the perfume bottles, which are then ready for boxing by hand.

In the beginning the handling of miniature crown bottles—among the company's largest volume items—presented a very difficult problem, because of their odd shape and the extremely small neck of the bottles ($\frac{5}{32}$ in). No standard machine was available for this purpose at the time and the company had to design its own rotary, vacuum-type filling machine, equipped with a series of pockets in a chain. Operators place the individual bottles in these pockets which carry them to a centering device under the nozzle of the filler. In operation this centering device is a revolving disk, the outer circumference having a series of semi-circular depressions. As a bottle moves into one of these depressions it is automatically carried into correct position under the filling nozzle. With this equipment, the company can fill up to 120 miniature crowns per minute.

The screw capping is a continuation of the filling operation by means of a semi-automatic machine. Operators start the caps on the bottles as they pass by conveyor and the caps are tightened in the machine. A standard labeler has been adapted by the company by the use of a turret accommodating two crowns at each of eight stations. Gummed labels are picked up by vacuum, moistened and applied to the bottoms of the bottles as they pass over the roller. Labeling is done at about 60 per minute.

Straight-line equipment of conventional design, adapted to the purpose, is used for the filling of crown cologne bottles, sceptre bottles and flasks. The affixing of the brass screw cap on the crown cologne bottles is no particular problem, but the combination glass-stopper and cork used on some of the containers and the screw caps topped with the brass cross for the sceptre bottles require special handling.

An interesting production feature is the method Prince Matchabelli has devised for filling two fragrances of cologne in 1-oz. flask bottles at the same time. A few years ago the company decided that a successful, popular-priced package would be a gift carton containing two bottles of favorite fragrances. To fill the required amount of one fragrance first and store it until the required quantity of the other could be filled was inefficient. A technique was developed whereby both are now filled on the same machine simultaneously by equipping the machine with two separate reservoirs and adjusting the 12-head filler so that six nozzles fill one fragrance while six others fill the other.

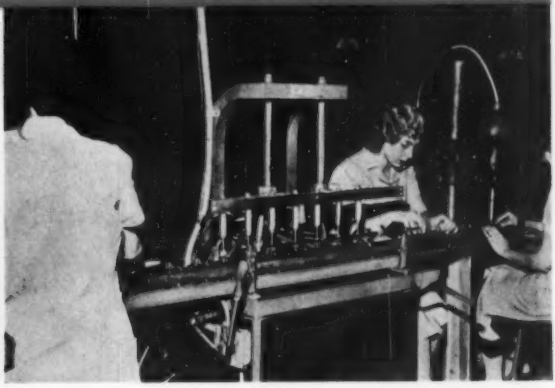
The production department is continually working on new ideas to cut down overhead in perfumery package production and has many new things underway in connection with the Prince Matchabelli line as well as for Seaforth toiletries for men, now also Vick products packaged in the same Bloomfield plant.

The company attributes its continued success principally to (1) a continuation of the Prince's policies of showmanship in beautiful and dramatic packaging; (2) a line of packages to fit a wide pocketbook range; (3) concentration on a few items with strong promotional possibilities, making buyer selection easier and consumer recognition greater; (4) gift packaging in the novelty class, with fresh slants each season—but never with a confusion of gadgetry.

The Prince's conception of perfumes to match personalities and moods has been carried out in the miniature crowns and combination packages of several small bottles of various fragrances. In the late '30s the company began putting purse-size crowns in decorative Christmas snowball packages covered with velvet, in metal Christmas bells and Easter egg packages of satin and delicately-colored plastic. About this time too came the miniature hat box, containing two fragrances in miniature machine-made crown bottles—one of the most successful and certainly one of the hardiest perennials in the cosmetic business. The hat box has been redesigned many times, not only to keep it up to the minute in motif and color but to meet the trends

preserves decorative details

POCKETS in a chain carry miniature crown bottles to specially designed filler. Centering device positions tiny odd-shaped bottles under filling nozzles. Company can fill up to 120 per minute.



STRAIGHT-LINE FILLER of conventional design has been adapted to filling cologne bottles. Screw capping is done on standard equipment where possible, but special handling is necessary for glass stopper or screw caps with decorative element.

of the times. During the war, when it was impossible to decorate it with flowers and ribbons, a piece of tulle was substituted. At one period the hat box came equipped with two tiny stick pins surmounted by the Matchabelli crown. This year it looks like a traveler's hat box, gay with simulated travel stickers.

Prince Matchabelli, Inc., pioneered the fragrance sampling idea in the early '40s with its two- and one-drawer boxes containing a group of small bottles—a packaging procedure that is now universal merchandising practice in the perfumery industry and continued by Prince Matchabelli with its round, rigid-transparent box containing six fragrances in small sceptre bottles.

For the Easter parade of 1946, Prince Matchabelli dazzled the cosmetic trade and perfumery shoppers with its dramatic "block of ice" package—a cube of acrylic plastic in two sections, each one injection molded to conform to the contours of the crown bottles. When filled together with the bottle inside, each package gave the effect of the bottle suspended within the transparent cube. Success of this package was followed in September of the same year by a similar transparent plastic cube faceted like a square-cut diamond and used to introduce a new perfume called "Crown Jewel." This package represented one of the early uses of an acrylic material as a purely decorative packaging medium and for several years it was one of the most sensational packages on cosmetic counters.

Just as Prince Matchabelli himself launched his perfume packages with showmanship conducted in the grand manner, the products have continuously been given the same kind of dramatic promotional support.

For example, during the mid '40s when a new perfume called "Stradivari" was introduced, the company sponsored a Stradivari Orchestra on a radio network. Genuine Stradivari instruments, rented from priceless collections belonging to Rembert Wurlitzer and Emil Herrmann, were assembled to make up the 15-piece orchestra. The owners, it is said, were willing to cooperate because of the high character of the program and because the instruments were played by musicians selected from leading symphony orchestras. Within six weeks after its inauguration, the program won the highest Hooper rating ever reported for that time on Sunday

(*This article continued on page 199*)

TYPICAL PACKAGING for a complete fragrance line is illustrated by these "Duchess of York" items: perfume, cologne, sachet, soaps, powder — tastefully put up without gadgetry.

In-pack

LIFE-SIZE reproduction of the premium in the package appears on the front of the new carton. The in-pack design means less bulk, provides a single unit for both premium and product.

ROTATING PANELS on the back of the package explain three product applications in clear illustrated copy, starring each one periodically in turn at the top.

Current conditions of self-service selling have given premium merchandising another swing—this time away from the mail-in or coupon-saving type toward the on-pack or in-pack premium, the premium you take home with your purchase.

A successful current example is the new Soilax package, launched this fall in 90% of the nation's supermarkets and grocery chains and in paint and hardware stores all over the country. The Soilax premium is packed right in the carton with the detergent.

Economics Laboratory, Inc., St. Paul, Minn., maker of Soilax and specialists in commercial food-utensil sanitation, has for years promoted the sale of the 18-oz. household size of Soilax with premiums of one kind or another—generally of the send-for type. Last year the company decided to feature Soilax in a 3-lb. economy size. The idea was to get the housewife to increase the number of household cleaning chores she does regularly with Soilax and to encourage her to experiment by selling her a giant economy size of the detergent cleaner.

Partly because of its reputation as a "heavy" cleaner, Soilax has been associated seasonally with spring and fall house cleanings and it was this limitation that decided the company to aim its merchandising campaign at the many year-around household uses of the product.

To introduce the new jumbo pack, Economics adopted an on-package premium offer which proved instantly popular—a brand-name cellulose household sponge, O-Cel-O. Economics absorbed the cost of the sponge, valued at 29 cents retail, and advertised the desirable premium with its new super pack of Soilax.

Styled by a leading designer, the package provided a colorful presentation on the store shelf. The cellophane-wrapped sponges came in three colors—pink, yellow and blue. The predominantly red background of the carton provided a strong-selling mass display.

Pleased with the success of the sponge offer in promoting the 3-lb. size, the company decided to continue in this direction for its 1952 fall campaign, improving the offer if possible. The on-pack premium sponge was retained for the 18-oz. household size and all three of the company's plants—at Chicago, Lyndhurst, N.J., and Santa Clara, Calif.—have a production-line procedure which allows for the gluing operation that attaches the sponge to the carton face. But something new was desired for the 3-lb. premium in the form of a successful take-home quality item, related to Soilax in use.

The O-Cel-O dish mop was the answer. This item has a certified retail value of 39 cents, which in premium merchandising is reported to represent an unusually generous offer. Most point-of-sale premiums on a free-deal basis run 15 cents or under in retail value.

The mop has many uses that can be advertised to the benefit of the detergent powder. It cleans tall glasses, Venetian blinds, car grills, refrigerators and many hard-to-get-at

premium

SOILAX FINDS ADVANTAGE IN BREAKING AWAY

FROM MAIL-IN AND COUPON OFFERS TO PUT A QUALITY ITEM RIGHT IN PACKAGE

spots around the house. It also lends itself well to premium packaging.

This time the company decided to pack the premium *inside* the package. No special packaging problems were involved. As the carton comes from the carton shaper, the mop, which is practically the same height as the carton, is dropped in upside down. Following this step, the carton is filled with Soilax powder.

The advantages of the in-carton pack are significant to optimum distribution of the product. The finished package is one complete unit. It is less bulky in storage and mass display than the on-pack premium package.

On the other hand, the visibility of the free premium gave the 1951 package strong impulse appeal. In order not to sacrifice this plus in the 1952 version, the designer placed a life-size illustration of the premium on the front panel, making it the focal point of interest by a clever interpolation of contrasting color on the plastic mop handle.

The final package as put into production shows the premium illustration thrust "over" the clean sweep made by the familiar hand-and-sponge and pinned "under" the Soilax brand name in sharply defined perspective. The printed film band on the mop head is reproduced to show the brand, retail value and prime function of the premium. A broad arrow printed at the lower right of the panel points to the mop drawing and gives the story at a glance: "*Free of extra cost*—packed inside."

From the merchandising point of view, the real advantage of the new package design is the complete visibility of the premium message no matter how the cartons are stacked on the shelves. The top and bottom panels carry the same copy that appears on the front, so that the carton can be stacked three ways in mass display. This is extremely important for those displays set up in stores which use the slanting type of bin.

The back panel of the carton retains the 1951 copy instructions and illustration, as do the sides. Emphasis is placed on the detergent as a first-rate linoleum cleaner, with every-day uses in the bathroom and for touch-up jobs around the house also featured. These instruction panels will be switched periodically, thus placing full emphasis on the product's diversified uses while highlighting one at a time.

The makers of Soilax appear to have borrowed this design trick from the cereal and cake-mix manufacturers, who have been rotating product uses on the front panels of their packages for some time.

The new carton is made of super patent white board, of 32-pt. thickness, printed in five colors and varnished to protect the surface against staining and wetting when handled in use. The colors, which are red, yellow, green and black on white, give the package striking visibility.

CREDITS: *Design, Jim Nash, 405 E. 54th St., New York. "Aqua Seal" cartons, The Ohio Boxboard Co., Rittman, Ohio. Premium, O-Cel-O, Inc., 347 Madison Ave., New York.*

DIVERSIFIED STACKING is facilitated by specially designed top and bottom panels, where bin treatment is given special consideration. Counter motion of premium drawing and copy directs the eye, simplifies reading of an otherwise crowded panel.

ORIGINAL OFFER was a cellulose sponge glued on the package. Its success prompted extension of the take-home-with-purchase idea leading to the in-pack dish mop for the 3-lb. size, while the on-pack sponge was retained for the 18-oz. size.

Paper boats launch new caramels

Small paperboard boats solved the problem of packaging softer caramels without requiring a reduction in the number of pieces per pack or a hike in the popular five-cent price, according to Peter Paul, Inc., Naugatuck, Conn., makers of Coconettos, Walnettos and Chocolettos. Less costly clear cellophane now replaces the former printed cellophane wrap as the one-color printed boats provide strong brand and flavor identity. A new package shape also saves material and is more convenient to carry in pocket or purse. Individual waxed-paper wrappers have been retained for the candy pieces. The strong family resemblance has been preserved but a different color distinguishes each flavor. A counter carton holds 24 pocket-size packages.

CREDITS: *Designer, Jim Nash, 405 E. 54th St., New York City. Counter carton and paperboard boats, National Folding Box Co., New Haven 4, Conn.*

Polystyrene containers prevent tatting threads from snarling

A molded, two-piece, friction-fit, transparent polystyrene container brings a new convenience to users of J. & P. Coats' tatting-crochet threads, called "Tat-Its." The new globular containers, with brand identity designed in the mold, enable the tatter to use as many colors at once as her pattern calls for without getting threads snarled or having to pick up runaway spools. The thread is reeled off the paperboard core out from a small vent in the top of the dispenser by a slight tug at the free line. And the clear containers show at a glance the color of each spool being used. These advantages encourage the consumer to use more thread. Low retail price of the product (five cents) blocked packaging progress until "Tat-It" was developed to sell for an additional nickel.

CREDITS: *Designer, Gerald Stahl, 12 E. 46th St., New York 17. Containers molded by C. B. Cotton & Co., Inc., 114 Forrest St., Brooklyn, N. Y.*

HISTORIES

New flavor emphasis on printed cellophane overwraps

Cal-Ray Bakeries, Glendale, Calif., has adopted a new family design for its cookies which sets off each individual flavor yet harmonizes the group in display. The new carton overwraps are of printed cellophane in strong, beautifully registered colors chosen to provide balance or contrast with the authentic cookie reproductions that "roll" across the bottom of each front panel. On each package there appears the same circle design of white lace to signify home-made goodness and freshness, while a tiny botanical illustration of a lemon, cocoa bean or cocoanut above the brand name emphasizes the particular flavor. The result of the new packaging is a sparkling family each member of which, in selling itself, also helps to sell the others.

CREDITS: *Designer, Tinsley T. Jepson, 5478 Village Green, Los Angeles, Calif. Cellophane wraps produced by Milprint, Inc., Milwaukee 1, Wis.*

TV-screen-shaped panel on new labels for Smart and Final

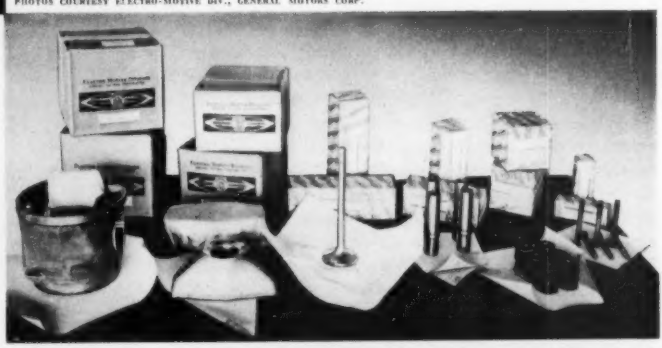
For several years the Smart and Final Co. of Los Angeles, Calif., packers of fancy foods, has been attempting to stress the full company name rather than the initials, for better consumer recognition of its private-label merchandise. At first the old label was changed to include the full spelling of the company name, athough the large initials were retained. This year, however, the entire label was redesigned and a new logotype developed which will carry through on all 250 items in the line. The gold of the old label has been retained as a symbol of quality, but white has been added which more dramatically and vividly brings out the color work of the product vignette in a TV-screen-shaped panel. Side panels have also been modernized, with added serving suggestions on all food-item packages.

CREDITS: *Designer, Neal Sampson, San Francisco, Calif. Labels, Louis E. Roesch Co., San Francisco, Calif., and Independent Lithograph Co., San Francisco, Calif.*

How VCI*

VISUAL PROOF of effectiveness of volatile corrosion inhibitor in preventing valves from rusting, despite intentional fingerprints and exposure to salt air, is indicated by this exhibit. At end of test, valves were still entirely free of corrosion. Cut-away boxes show how the VCI paper is placed in the packages.

PHOTOS COURTESY ELECTRO-MOTIVE DIV., GENERAL MOTORS CORP.



TYPICAL parts with which VCI paper is used as a rust inhibitor (left to right): piston carriers, crabs, valves, valve guides, nuts and bolts. These examples show amount of paper used with each item. VCI paper eliminates necessity of dipping parts in preservative before being packaged.

FOR VALVES, which are highly finished and include two types of steel, small pieces of VCI paper are wrapped over the valve heads and the stem ends before being placed inside the folding boxes and labeled.

Even the tireless Diesel locomotive, which due to its efficiency and operating economy has virtually displaced steam-powered rail equipment in recent years, must be serviced from time to time to keep it in top running condition. Since an idle locomotive makes money for no one, the importance of dependable replacement parts which can be installed without delay may be readily appreciated.

Getting these precision parts to its customers—the nation's railroads—in perfect condition constitutes a major objective at the huge La Grange, Ill., plant of Electro-Motive Div., General Motors Corp. As the world's largest supplier of Diesel-powered locomotives, EMD pre-packages some 15,000 different parts items, from tiny bearings weighing only a few ounces to complete 3,500-lb. crankshafts 17 ft. long. Some types of units are packaged directly in production departments for maximum protection, but the bulk of Electro-Motive's parts packaging and storage are centralized in a modern warehouse where materials and methods are under constant scrutiny to keep pace with latest developments in the field.

During the past five years, the most significant change taking place in EMD's parts packaging program has consisted of the adoption of volatile corrosion inhibitors—chemistry's latest answer to the problem of rusting in ferrous metal parts and assemblies. At present, according to R. C. Lambrecht, manager of parts warehousing, specially treated VCI paper is used in 98% of all preservation packaging handled by the division, including every item that goes into a closed wooden box or carton, on both domestic and export shipments. Mr. Lambrecht points out that on just two high-volume assemblies, Electro-Motive has shown savings of $100,000 per year through the use of volatile corrosion inhibitor. This saving resulted from the adoption of inexpensive fibre drum containers which could not be used in conjunction with oil preservatives formerly required for these parts.

The rapid rise of the Diesel-powered locomotive has been reflected in changing methods of handling replacement parts. In the early days of EMD, when the parts business was still a relatively small operation, little thought was given to the question of parts storage and the accessibility of parts to the customer. Small parts were usually bulk shipped in wooden boxes, separated only by the excelsior added to keep them from rattling.

*VCI (meaning "volatile corrosion inhibitor") is now the generally accepted term for chemicals—also known as "vapor-phase inhibitors"—used in packages or packaging materials to give off vapors which inhibit the corrosive effect of the atmosphere within the package on the product. The term is used here to include sodium nitrite urea, dicyclohexyl-ammonium nitrite and other similarly performing chemicals.

cuts costs

VOLATILE CORROSION INHIBITORS SAVE G.M. DIESEL $100,000 A YEAR

ON JUST TWO ITEMS, ARE USED IN 98% OF ALL PRESERVATION PACKAGING

A few highly finished parts were wrapped in oiled paper for further protection, while other items were rolled in newsprint or other low-cost paper which soon deteriorated or was ripped off in normal handling. Practically nothing was pre-packed in carton form, in line with the present practice.

During this period the manufacturer was considered to have done his duty if parts reached the buyer in satisfactory condition. What happened to them after arrival was the buyer's responsibility. Today, by way of contrast, Electro-Motive planning encompasses not only product protection in transit, but also further protection and customer convenience while the parts are held in storage for future use. Since EMD's guarantee on all parts begins when they are actually placed in service, the wisdom of this policy is readily apparent. In some instances, a part may be held in storage as long as three or four years before it is actually needed.

Electro-Motive's work with VCI packaging materials began about five years ago, following introduction of these materials to a group of General Motors packaging and research men. At that time the ever-present problem of rust was being met by dipping parts in a preservative prior to packaging. Considering that a cylinder head weighs 140 lbs. and connecting rods 59 lbs. each, it may be seen that dipping parts of this size and weight presented considerable difficulty. The amount of space required for the dip tanks was but one of the disadvantages of this system. Also involved were the attendant fire hazard, the time and labor required and the fact that the coated parts were messy, slippery and difficult to handle. The method also had its drawbacks from the customer's point of view, since additional time and labor were necessary to clean the parts before they could be placed in service.

With the general adoption of VCI papers, all dip tanks for applying preservative to parts have been eliminated. On one or two very large parts, including crankshafts, a preservative coating is applied by means of a paint brush prior to crating, but successful tests of the volatile corrosion inhibitor paper suggest that even these components may eventually be protected by this cleaner, more efficient method.

What this means to the customer is shown by the example of a cylinder-head assembly, which takes from 45 min. to 1 hr. to clean up after removal from a package having a conventional-type rust preventive and waxed paper. With the completely dry type of pack made possible with VCI paper, the customer merely removes the cylinder head from the carton, blows off any dust present with an air hose and it is immediately ready for final assembly.

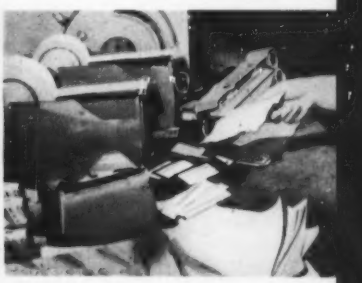
When a volatile corrosion inhibitor is used within a package, the moisture contained in the air is transformed into a protective coating which inhibits rather than promotes rust. The chemical continues to vaporize slowly, neutralizing the effects of moisture. Now, when the oxygen is drawn to the metal, it forms a protective coating to prevent rust rather than start rust.

Tests conducted by Electro-Motive indicate that once a package with VCI has been closed, a period of about 2 hrs. elapses before the entire space within the package is permeated by the vapor. The company

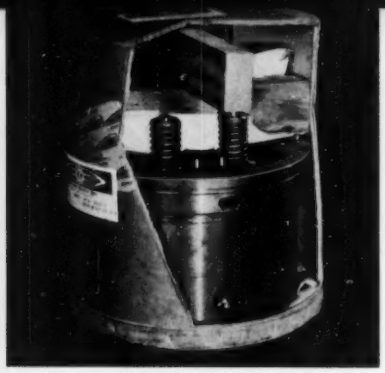
EXPORT PACKS

BEARING INNER-RACE parts are first loosely wrapped in VCI paper. Boxes at the left carry over-all Electro-Motive design to insure prompt identification.

WRAPPED BEARING RACES are placed in a bag which is fabricated of cloth-backed aluminum foil with a heat-seal coating applied on the inner surface.



OPEN END of bag is heat sealed and bag placed in solid fibre folding carton. Applied label explains pack is VCI protected.



CUT-AWAY VIEW of fibreboard drum used for packaging cylinder heads shows interior blocking and use of VCI paper to protect part against possibility of rusting in transit and storage.

CYLINDER LINERS are similarly packed, enabling customer to place them in service without the delay of degreasing before use. Crumpled VCI paper near top guards highly polished surfaces against possible corrosion.

takes the view that the vapor will travel and protect for a distance of about 12 in.

"We have proved this repeatedly," states Mr. Lambrecht, "by putting a 24-in. shaft into our standard corrugated carton with a volatile corrosion inhibitor at one end only. This carton is taped in the usual way—not airtight. After a severe test, the first 12 in. of this shaft will be perfect, the 13th inch will be good and fairly in line with the first 12 in. The 14th inch will be cloudy and so on out to the last inch, which will have a definite coating of rust."

This demonstration emphasizes the fact that the chemically treated paper must be used properly within the container for maximum results. In a carton 24 in. long, for example, EMD would use a piece of the paper at each end, plus an "insurance" piece around the middle of the part. The material need not be wrapped entirely around the part; in many cases, it is sufficient merely to crumple some of the paper and position it properly within the container.

In testing the effectiveness of VCI-protected packs, Electro-Motive frequently ships various parts long distances, thereby subjecting them to the day-and-night, hot-and-cold cycle. Then they are returned to the plant for inspection. In all instances, those packs in which the material was used in the proper quantities have shown up in perfect condition. Experience has also shown that the presence of oil on a part being wrapped in a volatile corrosion inhibitor is not harmful, unless so much oil is involved that it soaks into the entire surface of the paper and slows down the chemical action to a critical point.

EMD's work with VCI materials has highlighted the necessity of educating personnel in their correct application. For example, the division's work sheet covering the packing of fork rods specified three pieces of VCI paper 18 in. square, but did not include instructions on where they should be located within the 42-in.-long package. For a brief period, two new workers unfamiliar with this package placed all three pieces of paper at one end. As a result, the basket end of the part, adjacent to the protective material, retained its original finish, while the eye end, 40 in. away, was coated with rust. All rods packed in this manner showed the same results.

Fuel injectors are a notable example of packaging progress made possible at Electro-Motive through the adoption of volatile corrosion inhibitors. These parts have a precision-made sliding rack which cannot be fastened firmly in the package because a shock might spring it and cause a sticky injector, resulting in engine failure. EMD's previous practice was to coat the injectors heavily with oil and ship them in a $4 metal container. Movement of the rack during transit would rub off all the oil and if the part was stored for any length of time prior to use, rust would form. Through the adoption of volatile corrosion inhibitors, EMD was able to eliminate the costly metal container and utilize a 29-cent fibreboard carton. In more than three years' experience with this type of pack, not a single case of rusting has been reported.

Cylinder liners and cylinder heads were formerly coated with rust-preventive compound and packed in heavy wooden boxes requiring much excess storage space. Now these parts, protected against rusting by means of an inner wrapping of VCI paper, are packed in snug-fitting cylindrical fibreboard cases, with inner blocking to prevent movement. Being airtight after the cover has been sealed with tape, these drums are particularly effective when used in conjunction with a volatile corrosion inhibitor. They make possible a 20% saving in shipping costs, due to reduction in weight, plus other advantages of a grease-free pack, and lend themselves ideally to palletized handling and mechanical stacking.

Connecting rods, weighing nearly 60 lbs. each, are packed individually in heavy fibreboard boxes, with internal fillers to prevent chafing. Pieces of VCI paper within the package keep the polished bearing surfaces like new. In packaging valves, small sections of the paper are wrapped over the valve heads and stem ends before they are placed in folding boxes and labeled. Fingerprints, which in earlier days presented a constant threat of rust in packaging highly finished ferrous parts, are no longer a problem. Tests by Electro-Motive have proved that volatile corrosion inhibitor, correctly applied, will arrest the oxidizing influence of any fingerprints present on the packaged part. However, on all military shipments, fingerprints are thoroughly removed before packaging.

On complicated assemblies such as electrical relays, contactors and voltage regulators, dipping in oil as a preservation method is out of the question. Previously, these items were shipped bare, with the hope that the ferrous metal components present would not rust prior to installation. With the present method, a small

PACKAGING of cylinder heads and liners directly after final machining eliminates extra handling, preservation dipping and other operations. Cylinder heads, weighing 140 lbs. each, were awkward to dip under the earlier packaging methods.

CRATING of an entire electric generator destined for export shipment shows use of an inner shroud of flexible corrugated material with VCI-treated inner surface. Such heavy items are then solidly crated.

piece of the VCI material is merely inserted in the package, affording excellent protection at negligible cost and without complicating the packaging procedure.

Electro-Motive has found that by applying volatile corrosion inhibitor immediately after the final machining operation on a part, a number of subsequent steps can be eliminated. There is no longer any need to transfer the parts to wire baskets, dip and drain them, and transfer them again to shop containers for later packaging. Through this system, the time and space required for these operations are saved and the possibility of damaged parts eliminated. VCI-packed parts carry a conspicuous label printed in red and black, and customers are advised to keep such parts in the original containers until ready for use. The paper may be used over as long as the material to be protected is placed in a closed container. When the white coating of the paper changes back to the kraft shade, this is an indication that the anti-corrosion properties of the material are no longer effective.

Recently, Electro-Motive has been conducting tests of volatile corrosion inhibitors in crystal form, believing that this method will prove advantageous for the internal protection of engines. Used for some time by a leading aircraft manufacturer, this approach involves the use of a metered air gun which sprays a measured quantity of crystals into the package just before the cover is closed. At present, EMD is not making commercial use of this method.

Unitized packaging and other efforts to reduce shipping weight, cut damage claims and get locomotive parts in service without cumbersome unpackaging and parts conditioning have brought about replacement of heavy wooden boxes, where possible, with strong, light-weight fibreboard and corrugated containers. Currently, Electro-Motive uses approximately 130 varieties of solid fibreboard cartons, 230 types of folding cartons, 110 varieties of corrugated cartons and 220 kinds of wooden boxes and crates. Very heavy items, such as complete generators, crankshafts and entire engines destined for export shipment, are solidly crated with tongue-and-groove lumber, with a layer of vapor-barrier paper lining the inside of the container. Further internal protection for export packs is in the form of a complete shroud or wrap of creped corrugated board having a volatile corrosion inhibitor on its inner surface.

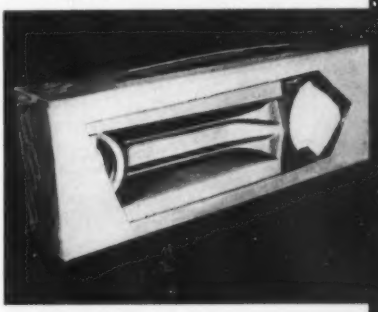
How imaginative packaging can save time for the parts user is illustrated by a patented fibreboard container used by Electro-Motive for a complete armature rewind kit which includes 2,861 separate pieces. This container has an attached wooden pallet base and inner packages of shallow, drawer-like construction, stacked one upon another, separating the various parts in the proper work sequence. All parts are individually wrapped and clearly labeled to eliminate guesswork by the mechanic.

After packaging, Diesel spare parts are transferred directly into the well-organized warehouse section of the parts building. Identification of parts is by means of red-bordered gummed labels which are made up as required in the packaging department. Printed in a continuous strip and perforated for easy separation, the labels include blank spaces for insertion of quantity, part number and description. When a quantity of parts is to be packaged, the required number of labels is automatically printed on a small dial-set unit which uses removable slugs mounted in a drum arrangement. Finished labels are placed in a printed kraft envelope on which part number, description, unit quantity and other data are filled in. Information entered upon these envelopes is duplicated by means of a carbon-backed slip for the warehouse records.

After being moistened and fas-

(This article continued on page 205)

PACKED INDIVIDUALLY, connecting rods protected against rusting by means of VCI papers keep polished surfaces factory bright. Mechanical protection is afforded by heavy fibreboard box, with internal fillers to prevent shifting and chafing.



PACKAGING PAGEANT

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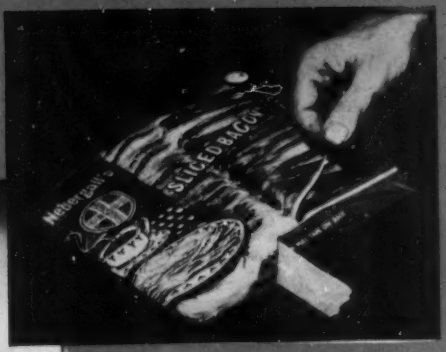

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1 A heart-shaped decanter increases the gift appeal of Rare Cream Sherry and Rare Tawny Port distributed by Paul Masson Vineyards. A reproduction of the bottle appears on the carton. Decanter, Glass Containers, Inc., San Francisco, Calif. DuPont Cel-O-Seal cap and closure by Armstrong Cork Co. through I. F. Schnier Co., Inc., San Francisco, Calif. Carton, Fibreboard Products, Inc., San Francisco, Calif.

2 The easy-opening tear tape now appears on cellophane bags for bacon. Since it has been adopted by D. E. Nebergall Meat Co., Albany, Ore., the new convenience feature has won quick acceptance among homemakers. Zip-Tape printed cellophane bags, a development of The Dobeckmun Co., Cleveland, Ohio.

3 A goose-neck bottle designed for sparing drop-by-drop use is the new packaging convenience introduced by Odol Chemical Corp., for its concentrated mouth wash called Odol. The bottle presently is being made in Japan. Bottle, through Transocean Commerce, Inc., New York. Phenolic cap, Armstrong Cork Co., Lancaster, Pa. Label, J. L. May Co., New York.

4 Corrugated boxes for new electric clocks of the Mastercrafters Clock and Radio Co. serve a dual purpose—to protect the clocks during shipment and as a handsome gift pre-pack. Each box has an all-over background of gold with a life-like illustration of the clock on one side and gift-card space printed on the other. Corrugated box, Stone Container Corp., Chicago.

5 A factory-sealed corrugated shipping carton that permits easier and safer handling has been adopted for television tubes by the Television Picture Tube Div., Sylvania Electric Products, Inc. Deluxe wood-grain finish, convenient hand holes, proper weight distribution to permit high stacking are some of the claimed advantages. Labeling was designed for maximum readability and easier inventory control. Container, Hankins Container Corp., Cleveland, Ohio.

6 To expand sales with a package more appealing to women, Helene Curtis Industries, Inc., has adopted a new coral-colored polyethylene bottle. Varying wall thicknesses of bottle provide interesting highlight effect. Constrictor plug permits easy-dispensing. Display carton is gold-colored foil and transparent acetate. Polyethylene bottle, Elmer E. Mills Corp., Chicago. Carton, F. N. Burt Co., Inc., Buffalo, N. Y., using Eastman Kodapak.

7 Davol Products Co. makes a handsome gift item by packaging a complete nurser set in a box. The boxes are available either in pink or blue. Each bottle and other components are carefully protected by white flexible corrugated board. Box, E. H. Buffinton Co., Providence, R. I.

8 Badger Paper Mills, Inc., has made several improvements in the packaging of its consumer rolls of waxed paper. Re-lettering of product name in upper and lower case puts emphasis on the word "fresh" in accordance with the company's logo. Illustrated descriptive copy has been placed on one panel and a cellophane over-wrap adds to the attractiveness of this clean-looking blue and silver package. Carton, Folding Carton Div., Green Bay Box Co., Green Bay, Wis.

9 What are called "open petal-top cartons" display colored-jeweled caps on a line of colognes for holiday selling by Helena Rubinstein, Inc. The material is foil-laminated paperboard printed in special colors to designate different fragrances. A cord and jeweled tassel complete the packages. Cartons, Robert Gair Co., Inc., New York, using Gair-Reynolds Foiline.

10 A new private-mold jar with handy, no-drip dispenser has been adopted as the new package for Melford Olson Honey Co.'s Mel-O-Honey. The red, re-usable acetate dispenser fits the jar for smooth easy pouring and brings the container right to the table. Jars and lithograph-

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ed closures, Owens-Illinois Glass Co., Toledo, Ohio. Labels, U.S. Printing and Lithograph Co., Cincinnati, Ohio, Dispenser, Dispensers, Inc., Los Angeles.

11 Individual packages of staples are "floated" in a bed of cellulose cushioning material by the Fastener Corp. as protection against shock in 10-package shipping cartons. Office staplers take full packages of staples. This careful cushioning keeps the staples together as a unit. Cushioning material (Type 500 Kimpak), Kimberly-Clark Corp., Neenah, Wis.

12 A tempting, full-color photographic illustration of a cheeseburger reproduced on the cellophane wraps for Snowflake Baking Co.'s Sunbeam Sandwich Buns, is making sales zoom. Grocers are giving it front-of-counter display. It is gravure printed in seven colors. Wrap, Shellmar Products Corp., Mount Vernon, Ohio, by Cododense Process.

13 Merry Mfg. Co., toy manufacturer, is reporting unusual success with two new children's packages: Merry Beauty Shop for little girls and a "Shave-n-Shine" set for boys. Both are contained in appealingly-illustrated folding boxes. Folding boxes, U.S. Printing and Lithograph Co., Cincinnati, Ohio. Designer, Albert Greule, Cincinnati.

14 "Beauty in a basket for glamour queens from six to teens" is the idea for the promotion of Pretty Miss Products, Inc., imported straw catch-all package of toiletries for teen agers. Powder and lotion bottles, Carr-Lowrey Glass Co., Baltimore, Md. Globular cologne bottle supplied by W. Braun Co., Chicago. Caps, Flyndustries, Inc., New York. Ceramic labeling, Glass Crafters, Baltimore.

15 A new display carton gets a 35mm automatic slide viewer made by La Belle Industries off the shelf and on the counter. The carton opens for display. Four-step illustrations show how to load and operate the viewer. Designer, Richard M. Franz, Milwaukee 3, Wis. Carton, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.

16 Four different panels on the four sides of Meier's Wine Cellars, Inc., holiday gift cartons placed side by side make a complete Paris street scene. Brush stroke technique in multi-colors creates gay holiday atmosphere. Carton, designed and manufactured by United Board & Carton Corp., New York.

17 What is reported to be the largest re-usable tumbler —22¾-ozs.—has been adopted by Union Starch & Refining Co. for Pennant Marshmal-O. Tumbler is 6½ in. high and has handy-grip surface. Tumbler, Armstrong Cork Co., Lancaster, Pa. Caps, White Cap Co., Chicago. Label design, Harry Farrell, Chicago. Labels, U.S. Printing & Lithograph Co., St. Charles, Ill.

18 Van Raalte Co., Inc., has adopted two sizes of printed polyethylene bags to protect delicate-colored gloves. Retailers are asking for more of them. Consumers like their re-use feature. Polyethylene bags, Milprint, Inc., Milwaukee, Wis. by Perma Process.

19 A practical re-use container for shipping ice cream in dry ice is reported by Abbott Dairies, Inc., through the insulating properties of the corrugated board and a felt lining insert. An all-over metallic coating prevents condensation damage to box. Savings in dry ice have ranged from 5 to 50%, depending on time the box is in service. Container, Stone Container Corp., Chicago, Ill.

20 Seven frozen Chinese foods of Homway Frozen Foods, Inc., are packaged in aluminum tray packs with crimped-on foil lids. One item—four egg rolls—is packed in an open aluminum tray overwrapped with cellophane. Tray packs, Reynolds Metals Co., Louisville, Ky.

PACKAGING PAGEANT

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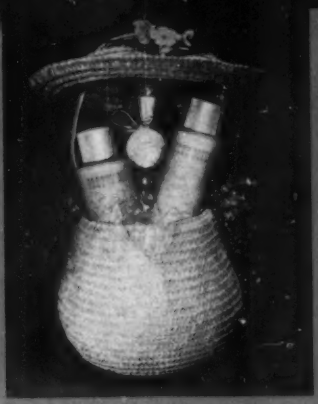

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DRAWINGS COURTESY GARRETT & CO., INC.

FOUR WINES are filled during each turn of this 24-spout filler, which handles 60 bottles a minute. Relatively simple modification of the machine would permit the filling of up to 24 different fluids if desired.

UNIQUE CONSTRUCTION of multi-liquid filler, adapted by Garrett engineers, is shown in cross-section views of top and bottom sections. The wine flows from stationary nozzles into revolving cylindrical tanks and drains into the pie-shaped quadrants, each serving six filling spouts.

Multi-flavor filler

'COMBINATION' PACKAGING GOES STRAIGHT-LINE IN GARRETT PLANT, WHERE ONE ROTARY MACHINE FILLS FOUR WINES SIMULTANEOUSLY

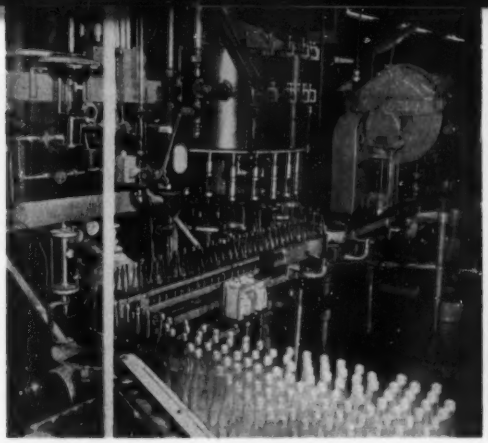
Simpler put-ups and combination offers, often the joy of the merchandising department, are almost always the bugaboo of packaging production, since installed equipment is intended primarily to handle an orthodox package and the intermittent-type scheduling involved in "special" packaging seldom permits runs long enough to justify installation of additional machinery. Consequently, combination packaging usually means increased amounts of hand labor carried on in special areas improvised in idle space or crowded into the regular production layouts.

Garrett & Co., Inc., 117-year-old producer of "Virginia Dare and other fine American Wines," has for more than a decade experienced excellent success with sampler-type distribution. This success, representing new customers and widening favor for individual wines in the family, was formerly bought at the expense of production inconvenience and heavier demands for work and storage areas.

These limitations no longer exist, however, because the company has been able to modify a standard filler so that it will, astonishing enough, fill four different types of wines simultaneously. As a result, all other operations—capping, labeling and sealing—are done straight-line, too.

The advantages of the multi-liquid filler are, obviously, not limited to the bottling of wine and should be of interest in several other fields of packaging, especially cosmetics, extracts, flavorings and the like, where combination put-ups are more or less standard practice.

The packages involved in Garrett's operation are ⅔-pint bottles, known



STRAIGHT-AWAY OPERATION. Bottles proceed from the unscrambler into the filler, which has just finished filling one type of red wine into six bottles and is starting to fill white wine into the next six bottles.

PROVED SALES BUILDER. Gift cartons of four wines no longer involve production delays, since bottles are filled and packaged simultaneously. Large bottles shown are gold-coated replicas of 100-millionth bottle of Virginia Dare wine.

as splits. Garrett customarily packages four of the bottles in an attractive dealer carton that contains two different red and two different white wines.

The modified rotary filler now used has 24 spouts and, in a regular cycle, type-one wine is filled into six bottles; type two is filled into the following six bottles; type three into the next six; and a fourth type into the last six bottles.

Formerly, when only one type of wine could be handled at a time on the filler, the practical schedule called for a day's run of each type of wine and thus four days passed before the combination package could be completed. Requirements for seasonal "gift" packages were not large enough to justify the installation of four or even two separate lines and the equipment then available made multi-liquid filling on one machine practically as impossible as getting one cow to give four different kinds of milk.

As developed by Robert W. Garrett, vice president of the firm and a descendant of the founder, the modified filler* (patent pending) has a two-layer filling head. The top bonnet section consists of four concentric cylinders. The bottom section is divided into four pie-shaped chambers. A single hole is so placed in the bottom of each concentric cylinder that wine from the upper receptable will flow into only one of the pie-shaped chambers.

*This machine is a Dunn filler. The modern model is manufactured by Crown Cork & Seal Co., Baltimore, Md.

Four in-feed lines from four overhead tanks are led in through the top of the filler shaft. The nozzles are so positioned that each remains stationary above a ring-shaped cylinder and wine flows into that cylinder as it revolves. Uninterrupted flow of wine thus occurs in each of the cylinders, which in turn maintain levels of individual types of wine in the bottom chambers of the filler. Each of the four bottom segments services six filling spouts.

The number of types of liquids that can be handled by a filler of this type is not limited to four. Actually, a different liquid could be delivered to each of the 24 filling spouts. To accomplish this, it would be necessary only to add the proper number of receiving cylinders and dispersion segments. The lines can be brought into the top of the filler, as in the Garrett operation, or they could be led up through the shaft. When desired, the filler can readily be adapted to handle all one kind of wine, as well as combinations.

The filler in the Garrett plant handles 60 bottles a minute. The wine, which was formerly filled by vacuum, is now gravity fed. A slight vacuum of only 5 to 6 lbs. is maintained, however, to prevent dripping from stems.

All bottles get identical 24 mm. caps (metal, screw-type, with pulp and vinyl-faced linings) and then receive the front-panel and neck-band labels.

The labeling of the four different types of wines on one machine in a straight-line operation is complicated by the fact that labels must be collated in four different sets of six each. The collating is done manually at present and the human equation is, of course, a critical factor, since one out-of-place label upsets the entire sequence. Garrett is now perfecting a device to collate the labels automatically.

Shrink-on secondary closures are put on the bottles following the labeling step and the brands are then shunted into individual lines and proceed to packing stations, where packers put one bottle of each type of wine in the four-pack dealer (gift type) folding carton.

The cartons, received in the flat, are scored for easy snap-open set-up. The clay-coated over-all green outer surface of the carton is smartly decorated with a wine-glass motif and a random script pattern of Garrett's famous "Say it again!" theme. The combined content of the package is equal to that of one regular ⅘-quart bottle. It sells for about the same price—approximately $1.

Other features

Garrett's packaging operations are typical of the mechanization and speedy output found in any efficient bottling line. However, numerous individual refinements that make for additional ease of handling and packaging have been developed. For example, several pallet loads of unfilled bottles are positioned on roller tracks (instead of directly on the floor) at

(*This article continued on page* 206)

Self service:
who says it's not for you?

Maybe you think your product is unsuited to self-service packaging.

Maybe it's hard to package. Difficult to display. Maybe it's vulnerable to dust, or soilage or rough handling.

But—maybe you've never tried PLIOFILM.

This rugged, clear, moistureproof film—*made only by Goodyear*—has everything your product needs to be a star seller on self-service counters.

PLIOFILM is so strong and tough, it's practically immune to splitting or ripping. It has dimensional stability—doesn't pucker or wrinkle. It eliminates soilage, drastically reduces returns and rewraps. Its transparency lends gleaming sales appeal to any package, and the velvety touch of PLIOFILM accentuates the quality of fine textiles. Its yield is greater than conventional films, making it far more economical to use.

Result: PLIOFILM has scored a resounding success as a self-service packaging material, not only for foods, but for aprons, sweaters, sheets, shirts, towels—and a wide variety of hard-to-package, hard-to-protect products that had never been sold—or seen—on supermarket counters.

PLIOFILM prints clearly in multicolors, handles easily in packaging machines. Why not see what the Goodyear packaging engineer can do about tailoring a PLIOFILM package to your product. Write:

Goodyear, PLIOFILM Dept.,
Akron 16, Ohio.

Good things are better

We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network

in Pliofilm

GOODYEAR
PACKAGING
FILM

3-way protection against air, moisture, liquids

Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Efficient carton stitching

TO GET THE MOST FROM YOUR MACHINE YOU MUST LEARN TO RECOGNIZE THE DIFFERENCE BETWEEN GOOD AND BAD STITCHING. By John Prout*

It is easy to get efficient, trouble-free performance from a wire-stitching machine if the operator will learn how to recognize good stitching. The distinction between good and bad stitching can be made easily if your maintenance man will remember the simple basic characteristics and the simple functioning which produces a good stitch.

All carton-stitching machines are basically alike in function. Each machine draws wire from a coil, cuts the wire to proper length, forms the wire into a stitch, drives the stitch through the material and clinches it. Wire-stitching machines now available to industry have been designed to give years of efficient service with little maintenance.

A properly operating machine will deliver a continuing number of good stitches. In general, a good stitch is one which has its crown flush with the surface of the material being stitched and the legs clinched tight enough to bury partially the ends in the material.

Even though the stitch crown may appear to be correct, there is no assurance that the stitch is properly clinched. For this reason, efficient operators inspect stitches periodically by turning the carton over and glancing at the clinched portion of the stitch legs to determine whether all stitches are satisfactory.

By observing five simple principles —in the order given—proper adjustment of a wire stitcher may be assured and stitching operation efficiency will be increased through a saving in both time and cost. The basic operating principles, as illustrated in Fig. 1, are:

1. *Wire draw*. The amount of wire draw must be in accordance with the work thickness of each job—about 5/16 to 5/16 in. longer than the thickness of the compressed material. In addition, the wire draw must be continually uniform for any one job. The length of each piece of wire must be checked after it is cut and just prior to its being formed into a stitch to make certain all pieces are of equal length.

2. *Proper wire cut-off*. The ends of each wire length must be free from burrs. When a sharp cut-off is not effected, the stitch legs will not penetrate straight through the material being stitched and the stitch legs will not be clinched properly. If several stitches are cut off and formed by turning the fly wheel by hand, then removed before clinching, any burrs existing can be easily detected by rubbing the fingers over the ends of each wire length.

3. Stitch legs of equal length (±1/16 in.). By hand turning the stitching-machine fly wheel, the forming and clinching operation is slowed sufficiently to determine the equality of stitch-leg length. As the stitch legs start to project from the formers, leg length can be determined by brush-

*Manager, Flat Wire Stitching Dept., Acme Steel Products Division, Acme Steel Co., Chicago.

Check these 5 points to see if you're getting top performance from your box-stitcher

FIG. 1

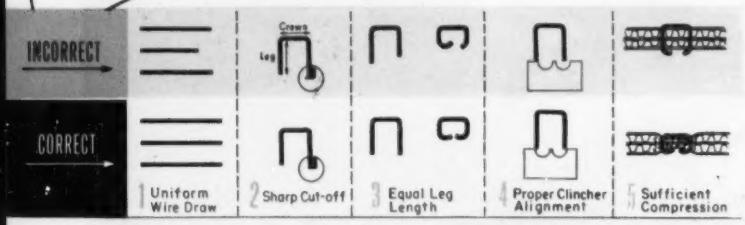
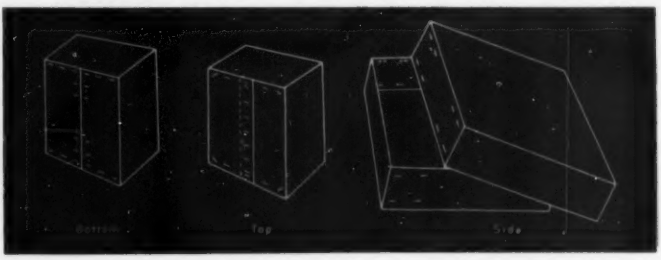


FIG. 2



PROPER STITCH PLACEMENT is essential to efficient and economical operation. Typical patterns for the various sizes and shapes of containers are illustrated by the diagrams at right.

ing the finger over the bottom of the former.

4. Proper alignment of clincher block. The clincher block must be aligned so that each stitch leg will contact the clincher-block grooves in the same relative position. By hand turning the stitching-machine fly wheel, the alignment of stitch legs with the clincher-block groove may be observed and, if necessary, corrected.

5. Sufficient compression of material. The material being stitched must be firmly compressed between formers and clincher to get a satisfactory stitch. To secure proper compression, the clincher block should be raised or lowered as required by adjusting the necessary parts until the formers mark the material slightly. Excessive compression will crush or damage the material. Insufficient compression will result in an improperly clinched stitch. To make compression adjustments, the clincher must be lowered to its lowest position, then raised gradually until a good stitch is obtained, indicating proper compression.

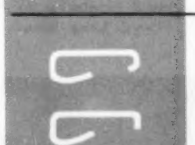
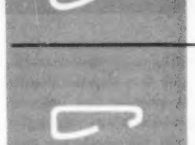
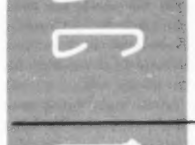
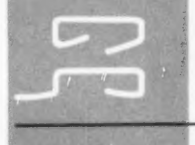
Familiarity with these five simple principles will improve carton-stitching operations. The ability to recognize good stitches is a major factor in reducing maintenance, with subsequent reduction of down time through improved efficiency of operations.

Another factor in efficient and economical carton-stitching operation hinges on the operator's ability to know how many stitches should be used to stitch various types and sizes of containers properly and also to know the proper placement of stitches in various sizes and shapes of containers that are to be assembled or secured.

Shipping and packaging departments should become familiar with basic carton-closing requirements which cover placement of stitches formed from various types of wire. In most cases, regulations will be met if stitches are placed not more than 2½ in. apart along the outer seams.

Packaging departments should standardize and closely follow the methods and standards of stitch placement. Typical patterns for various sizes and shapes of containers are shown in Fig. 2. The stitch pattern and procedure to be followed in placing the stitches must be determined in accordance with requirements, governed by the size and shape of each container.

CARTON STITCHING MACHINE TROUBLE SHOOTER'S GUIDE

STITCH	DESCRIPTION AND REMEDY
	PERFECT STITCH Crown flat; legs of equal length; legs clinched back into under side of material; legs almost touching; no damage to material.
	ONE OR BOTH LEGS BUCKLED Clincher block worn or out of line; too small wire size; uneven length or burred stitch legs; too little compression; worn anvil.
	BUCKLED CROWN Clincher block worn or out of line; too small wire size; uneven length or burred stitch legs; too little compression; worn anvil; excessive leg length.
	**RIGHT LEG CONSISTENTLY LONG OR SHORT** **(Drive at least ten trial stitches)** Improper feeding of wire because of feed wheel on side corresponding to defective stitch leg being out of adjustment.
	**LENGTH OF RIGHT LEG VARYING** **(Drive at least ten trial stitches)** Improper tension on wire straightener; dirty or worn feed mechanism; broken tension spring; wire guide friction not operating; former plunger inoperative; worn feed wheels; wire tangles on coils. Note: Too *much* tension on wire straightener causes variation in length of *right* leg *only*.
	**CORNER OF CROWN DISTORTED OR BROKEN** Too much compression; broken driver end; worn former legs; worn anvil; clincher block out of line or worn; incorrect wire size.
	IMPROPERLY CLINCHED Worn former legs; worn anvil; material too thick; clincher block not adjusted; dull or misadjusted cutter blade and cutter tube; improper wire cut-off.
	**WIRE NOT FORMED INTO STITCH** Broken or inoperative stitch-forming parts such as former plunger, anvil spring, wire gripper or gripper spring.
	STITCH COMES OUT IN PIECES Cutter tube inserted incorrectly; improper wire size (too large); wire not in line with grooves in stitch-forming parts.

A clock with a pendulum that really swings is the attention-getting feature of one display for a quality line of comfort shoes. A motor keeps the pendulum swinging to signal "Day Long Comfort in Massagic Air Cushion Shoes. The same maker's Porto-Peds, "America's Number 1 Comfort Shoe," are displayed by a stand cut in the shape of a map of the United States. Both units are in green and brown. Made by Milprint, Inc., Milwaukee, Wis.

Schering Corp. assists the retail druggist in telling the scientific story of the pharmaceutical industry with this three-part, full-color, lithographed window display. Life-like hands on a forward plane in the center panel appear to be working in a laboratory and provide the arresting focal point. The self-standing panels are made of heavy paperboard. Illustrations are reproduced from egg tempera paintings. Display created and produced by Consolidated Lithographing Corp., Glen Cove, Long Island, N. Y.

DISPLAY

To promote a special cleaner and wax for its floor tiles, Kentile, Inc. uses a display holding a dozen cans of each product on step-up shelves. Die-cut riser piece carries illustration of housewife and sales message. Additional stock may be stored under shelves. The vendor can be put anywhere in the store. Its green and maroon colors on white corrugated board give high visibility. "Selmor" merchandiser, Hinde & Dauch Paper Co., Sandusky, Ohio.

This compact display and merchandiser was designed to get a personal product for women off the shelves and onto the counters of space-conscious druggists. For the first time in 60 years, the manufacturer of Verazeptol is advertising direct to the consumer rather than through her physician. The folding display carton holds three cans of the product. Package labels have been modernized and the new promotion is being tested in selective markets. Display, Southern Press, Louisville, Ky. Carton, Bradley Gilbert Co., Louisville, Ky.

The crescent shape of this rustic wooden floor stand adapts it to any number of supermarket and food-store locations. The bin displays 7 doz. jars of Bennett's Chili Sauce, with room at the back for several cases. Rustic motif typifies the product's homemade flavor while lettering gives instant product identification. The pennant signals price in a big price block. Stand, Master-Kraft Fixture Co., Baltimore, Md. Duraglas Jars, Owens-Illinois Glass Co., Toledo, Ohio.

A transparent window poster was used by Richard Hudnut to introduce its Light and Bright Hair Lightener. It covers a worthwhile portion of the window yet doesn't interfere with view of the display. Also suited for showcase advertising, the poster is printed in two colors. It is attached to smooth surfaces by ½-in strip of pressure-sensitive adhesive at either end, protected before use by a peel-off strip. Sign and "Goodstix," Goodren Products Corp., 136 W. 21st St., New York 11, using Celanese Lumarith.

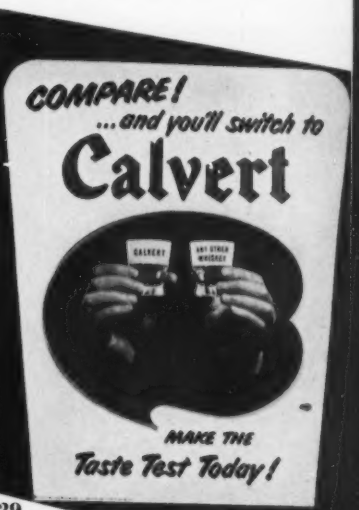
A 12-piece window display ties in Max Factor cosmetics with fashions shown in Harper's Bazaar, magazine. In the center card, a movie star "sells" the line, while two side cards display the fashions. Two jumbo-lipstick cut-outs and six small merchandise cards complete the product array and a fashion color guide keys lipstick shades to the fabric colors. Display lithographed by U. S. Printing & Lithograph Co., Cincinnati, Ohio.

GALLERY

Inflatable vinyl is used for this version of the Green Giant, inspired by roly-poly punching toys. The figure stands 50 in. high and is attached to a weighted base providing full support. Decorated in three brilliant colors, it is designed as central motif in mass displays of the Green Giant line in supermarkets and groceries, where its high visibility and novelty quickly lead shoppers to the line. Supplier, Doughboy Industries, Inc., New Richmond, Wis.

This realistic, eight-color, lithographed display for Lovell & Covel's "Candy Cupboard" is calculated to attract window shoppers quickly to these mouth-watering sweets—and to the cash register. The illustration of the package and chocolates, surrounded by toothsome ingredients and old-fashioned candy-making utensils like the sugar bowl, saucepan and mortar and pestle, suggest the home-kitchen flavor for which the confections of Lovell & Covel have won a wide reputation. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

How do the hands stay up in the air? This is the question which stops the passer-by for a better look at Calvert's new window display. Close inspection reveals almost invisible dark mesh netting to which the two larger-than-life hands are glued. The mesh is glued to the back of the die-cut opening in this full-color construction, 35 by 45 in. high. The "Taste Test" comparison motif does a strong selling job. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.



MOBILE HARVESTER for dry-pack system developed by Charles E. Huston works during cool hours of night when daytime heat has left lettuce. Workers cut lettuce heads, which are picked up by harvester crew.

Foil liner for lettuce

WITH NEW METHODS OF PICKING, COOLING AND PACKING, CRATE LINER OF FOIL BACKED BY WET-STRENGTH KRAFT DELIVERS A PREMIUM CROP

RIDING BOOM that spans 12 rows, workers pack lettuce into crates lined with new aluminum foil wet-strength paper lamination. Top conveyor carries empty crates, lower one moves crates to center for lidding.

While America sleeps, huge mobile packaging machinery that works right in the field at night now packs Western-grown lettuce for distant Eastern and Middle Western markets.

A new functional improvement in this packaging that is helping to deliver Western lettuce in better condition is one the housewife never sees.

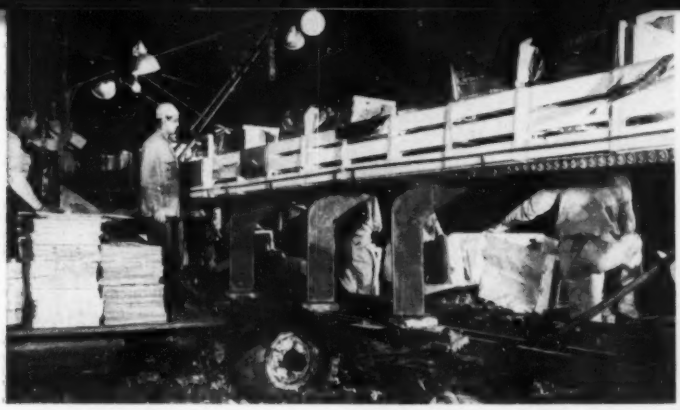
It is a new crate liner of aluminum foil laminated to wet-strength kraft paper by a waterproof adhesive that is reported to give such superior protection to the leafy vegetable that shipments so packed now command premium market prices. In addition, the new liner permits brand-conscious growers and shippers to have their brand name or label printed in color on the bright foil by the odorless gravure printing method. Although the brand identification is lost in the retail market, brands are important to produce buyers in wholesale markets.

Tens of thousands of refrigerator cars of lettuce move eastward annually from the great lettuce-growing areas in California and Arizona. The transcontinental trip takes from several days to two weeks, so that protective packaging is of the highest importance to retain crispness and freshness.

The standard package is a lined wooden crate, with 328 crates making a carload. Two methods of packing are followed, "wet" pack and "dry" pack. In the wet pack, lettuce is brought to a packing shed, trimmed and packed in the crate with shaved ice placed between each layer. In the newer dry pack, lettuce is customarily packed in the crate directly in the field without icing, then precooled at a vacuum cooling plant—an important new trend—before being loaded in the refrigerator car. A variation of this method is harvesting in the night hours, when the lettuce is cool to eliminate the precooling operation. Using huge, special packaging machinery that works in the field under floodlights, this brand-new night-harvesting operation is quite spectacular, as the accompanying pictures will show.

Development of the laminated-foil crate liner came as a result of the lettuce-growing and shipping industry's recognition that the standard paper crate liner provided far from ideal protection.

Aluminum foil was found to give much greater protection because of



LIDDING MACHINE (above) which completes the crate-packaging operation, is carried right on board the Huston lettuce harvester. A supply of crate lids is stacked ready for placing on the filled crates of lettuce as they move up the conveyor belt to the lid unit operator.

its reflective and conductive properties, imperviousness to light and moistureproof characteristics. Foil used bare, however, presented problems in handling and shipment. Sheets were difficult to separate and place in the crate. They were subject to tearing during that operation by sharp ice corners or in crate handling, with resulting reduction in protection and appearance.

The laminated-foil liner is reported to retain all the advantages of the bare foil, while eliminating its drawbacks. Lamination to the heavy kraft paper permits the use of thinner foil, so that the new liner's cost is less than that of bare foil, although somewhat more than the standard paper liner. The slight extra cost over paper is said to be more than compensated for by the fact that lettuce shipped with the new liners has consistently commanded higher prices in Eastern and Middle Western markets because of the greater retention of original lettuce quality and freshness. The premium price has ranged from 25 cents to $1 a crate, depending upon existing market conditions.

The laminated-foil liner works effectively with both wet- and dry-pack lettuce. Because foil forms a staunch barrier against air flow, oxidation is reduced. The lettuce suffers less from butt discoloration and has better keeping qualities.

Aluminum foil's high thermal conductivity helps remove heat from within the crate rapidly. The foil continues its protective work after crates are unloaded from refrigerator cars at receiving points. Its reflective properties reduce damaging heating up of the lettuce should crates stand in the sun for several hours. Destructive light rays cannot pass through the metal liner to attack the crates' contents.

Receivers of wet-pack lettuce have consistently reported that ice still remains inside the crate after transcontinental shipments, showing that the laminated-foil liner and pads between layers have given superior cold protection. Their use has also been found to reduce the development of harmful slime conditions.

The laminated-foil liners have proved themselves especially superior with dry-pack lettuce, whether precooled by vacuum or loaded directly from the field at night. The kraft-foil combination produces an exceptionally tough product that can withstand hard handling in field packing without tearing or suffering other damage.

In fan cars the water-vaporproof characteristics of the foil reduce the evaporation of moisture from the dry-pack lettuce. The result is better condition and appearance on arrival at the destination. Lasting qualities are considerably extended.

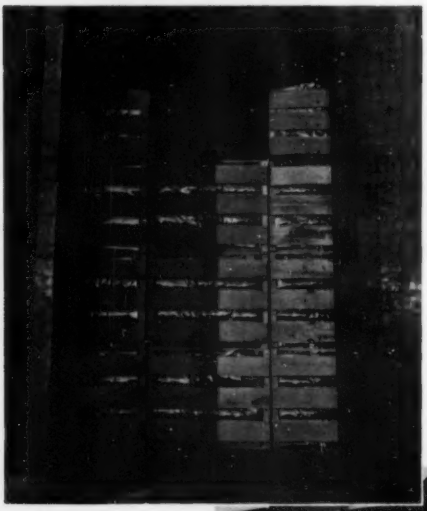
Much of the danger arising from condensation in warm, humid air when crates are unloaded is eliminated, according to users. The moisture tends to collect on the surface of the foil rather than on the lettuce itself. If some moisture does collect inside the crate, it is quickly absorbed by the blotter action of the inner kraft surface of the liner.

Besides the functional benefits provided by the new laminated-foil liner,

CLOSE-UP of lidding operation. Tough foil liner material stands up under severe field conditions. Imprinting permits colorful brand identification.

STRENGTH and easy handling of new foil crate liners permits Royal Packing Co. to line crates directly in the field for the company's dry-pack operations

FILLED CRATES roll by conveyor from lidding unit to truck, which carries them directly to refrigerator cars for immediate shipment.



CARLOAD of lettuce in crates using new liners of aluminum foil laminated to wet-strength kraft paper is ready for top icing in car before departure.

SHIPPING CARTONS for the laminated foil liners are designed to hold enough to line one carload of lettuce each per liner carton.

the appearance factor has proved advantageous to growers and shippers. Buyers at the receiving end are attracted by the bright foil surface, which may bear distinctive brand names in color, and from experience know that quality will be higher than the average run.

Charles E. Huston, developer of a highly mechanized harvesting and field packing system operating in areas near Salinas and El Centro, Calif., has made laminated-foil liners bearing an imprinted label an integral part of his operations. Mr. Huston concentrates his harvesting and packaging during the cool hours of the night and early morning when daytime heat has left the lettuce.

Crates are prelined at a central point and brought to the gigantic mobile harvester by truck. Under floodlights field workers cut the lettuce heads which are picked up by the crew working on the harvester. The boom of the harvester which spans 12 rows of lettuce is equipped with an overhead conveyor which carries the laminated-foil-lined crates to the workers. Packers working on the lower level place the filled crates on the conveyor which carries them to the lidder.

The liners stand up without damage during the fast, rigorous handling the crates receive as they move on the conveyors, are packaged and lidded before being returned to the truck for direct movement to the refrigerator car.

Royal Packing Co. of Salinas, Calif., successfully uses the liners in a different type of operation. Crates are lined in the field directly before packing. When packed, the crates are trucked to a vacuum cooling plant before loading in the reefer car.

Experiments are now being conducted on use of the laminated-foil liner with broccoli and celery. It has been observed that the produce arrived in better condition on shipments from Castroville, Calif., to Boston. There was less bud bruising because the dimensional strength and stability of the liner eliminated mechanical bruising.

CREDITS: *"Pac-Foil-Fresh" laminated-foil liners made by Pacific Coast Foil Co., division of Jorgenson & Co., 500 Sansome St., San Francisco 11, Calif., using aluminum foil by Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland, Calif.*

14th Annual Forum of the PACKAGING INSTITUTE

Hotel Commodore — October 20-22, 1952

The Packaging Institute hit another new high with its 14th Annual Forum held at the Hotel Commodore, New York, Oct. 20-22. Total gross registration was approximately 1,100, an increase of 11% over the previous record attendance in 1951. A jam-packed three-day program of 12 separate sessions, requiring as many as three concurrent sessions at times, went off smoothly under the direction of Program Chairman R. Chester Reed.

Meeting halls for production and technical discussions were generally filled almost to capacity. Among the most active sessions were those dealing with drug and pharmaceutical packaging, food packaging, printed packaging materials, production, and research and development.

Directors demonstrated their confidence in the current administration of the Institute by re-electing all officers and re-appointing as executive director Dr. L. V. Burton. Continuing for another term as president is Robert de S. Couch of General Foods Corp., with vice presidents F. S. Leinbach of the Riegel Paper Corp. and Mr. Reed of The Texas Co.

During the business meeting at the opening session three members were newly elected to the board of directors. They are Dr. John C. Bird of Lederle Laboratories; Frank Greenwall of National Starch Products, Inc., and Sam E. Noble of The Chattanooga Medicine Co. Re-elected to the board for a second three-year term were J. D. Malcolmson of the Robert Gair Co.; Mr. Reed and John A. Warren of American Home Products Corp.

Opening the Forum, president Couch reviewed the year's work of the standing committees and commented on the need for intensifying the Institute's activities to help meet new conditions created by the buyer's market in supplies. Mr. Couch welcomed to the meeting a number of foreign visitors, including the 11-man French packaging team which is currently touring the country under the auspices of the Mutual Security Agency.

After unanimous approval of the slate of new directors proposed by Charles L. Barr, chairman of the Nominating Committee, reports were given by Division Chairman H. Earl Nack, for the Product Division; Charles O. Kendall, for the Materials Division, and Mr. Warren, for the Production Division.

Luncheons on Monday and Wednesday attracted a good attendance. Feature of the Monday luncheon was the showing of a color film, "The Magic Box," produced by the Folding Paper Box Assn. At the Wednesday luncheon, a talk on atomic power and the atomic bomb, by Dr. Philip W. Swain, accompanied by the Navy's documentary color film of the Bikini bomb explosions, "Operations Crossroads," was well received. The annual cocktail party was held at the close of sessions on Tuesday.

It has been announced that the next Forum may be expanded to four days, probably from Oct. 19 to 22, 1953.

Assisting Mr. Reed on the Program Committee were E. H. Balkema, Allyn C. Beardsell, Dr. Bird, Dr. L. W. Elder, Lee R. Forker, E. R. Hamm, H. T. Holbrook, J. W. Hunton, Charles P. Jeppeson, Mr. Leinbach, Maurine Ponder, C. E. Schaeffer, C. M. Woodcock and Mr. Warren.

Following is a summary of proceedings at the 14th Annual Forum:

THE ATOMIC AGE

Chairman, R. C. Reed, *The Texas Co., Vice President of The Packaging Institute and Chairman, Program Committee.*

Problems of the Atomic Age—Paul Colsmann, *Brookhaven National Laboratory.* It is absolutely necessary, Mr. Colsmann said, that the use of radioactive materials be controlled and supervised somewhere along the line from supplier to user. Radioactive materials can be safe to handle when the personnel involved are trained in the techniques and hazards and have the necessary equipment and facilities.

Our shipping containers for radioisotopes were designed for simplicity and flexibility. Our boxes are adaptable to several sizes of lead containers to meet varying needs. Where they do not suffice, we have to improvise accordingly. The Oak Ridge National Laboratory, which ships radioisotopes on a production basis, has had sufficient volume to warrant design and development of standard containers.

I will not attempt to discuss the packaging of radioactive materials in detail, but I would like to bring out some of the general implications. You are aware of the problems and hazards facing a trained person who is handling radioactive materials in a suitably equipped laboratory. What happens, then, when this same material is to be used elsewhere? It has to be shipped and in normal channels of transportation a multitude of untrained and unequipped personnel may come in contact with it. Their only protection from the radioactive material is generally the package in which it is contained. When you know the potential hazards involved in radioactive materials, the specifications on such a package are apparent.

The ICC has published regulations governing shipping requirements and specifications for shipping containers and the CAB has adopted regulations quite similar for air shipment. However, these regulations, if you have ever waded through such tariffs, do not make a container any easier to design. One of the big design problems is to keep the over-all weight down to facilitate handling and reduce shipping costs. When shielding is necessary, you are more or less stuck with a certain weight no matter what material you use, since shielding is based on mass absorption. You can use distance within practical limits of container size, but many times there is no alternative but to use weight. Our average shipping container from Brookhaven weighs between 100 to 200 lbs. and usually contains less than a gram of radioactive material. We recently received a 6,600-lb. solid lead container from the West Coast via express and it couldn't be delivered at our end. We had to send our own 10-ton Mack truck in to the depot to pick it up. When we got it, we removed

the pound of radioactive material we had ordered and sent the container back. At last report we were dickering for half rate on the basis that we were returning an empty shipping container.

Shipping containers, however, do not represent the whole packaging picture. For radioisotopes to be applied to industrial and commercial uses, the radioactive materials have to be incorporated in such a way that they are safe to handle from a contamination point of view. This usually means that they have to be encased in suitable devices or packages. A survey of industrial uses of radioactive fission products, made a year ago for the AEC by the Stanford Research Institute, indicates the possible growth of large-scale industrial usage in the next two to 10 years. To anyone who is interested in pursuing this topic, I recommend obtaining a copy of the Stanford Research Institute report, which covers the technical and economic considerations attendant upon the use of these products.

A Packaging Problem Resulting from Nuclear Explosions—C. E. PETERSON *and* DR. ALLAN SCHENK, *Riegel Paper Corp.* Mr. Peterson discussed the effect of nuclear explosions on paper-production schedules and the steps taken to solve this problem.

Photographic film is extremely sensitive to various types of radiation. After an atomic explosion, minute particles of radioactive fission products were found to have gotten into paper during its manufacture. As suppliers of interleaving paper, which is used in direct contact with film, Riegel was faced with the problem of producing a specialized packaging paper that would be practically free of radioactive contamination.

After an atomic bomb is set off, radioactive dust and fission products form clouds that are blown away from the bomb site by prevailing winds. These clouds are monitored by plane to a point where they will not constitute a health hazard and then traced anywhere by monitoring stations operated by the Atomic Energy Commission. Since prevailing winds are West to East, radioactive clouds usually move in that direction. A small amount of radioactive dust may fall out of these clouds. However, it is when a radioactive cloud is over a given area and it rains or snows that the precipitation shows the greatest intensity of radioactivity. This radioactive material then finds its way into surface water in the course of normal run-off.

Since relatively large volumes of water are used in paper manufacturing, experience has shown that the mill water supply is the greatest potential source of contamination. Other sources are contaminated dust which may be blown around critical areas and possible contamination of all raw materials used.

Mr. Peterson explained how the contamination problem was handled. Since the primary concern is with minute suspended particles in the water and not radioactive solutions, a great amount of these radioactive particles can be removed by recognized procedures for good water-works practice. Both the information provided by the Atomic Energy Commission locating radioactive clouds and long-range weather forecasts by Government bureaus can be of real value in enabling a paper manufacturer to schedule production during periods of greatest possible safety, or if production is continuous, he can at least be on guard for critical periods.

Well water may be a safer source of supply, but if conditions were such that the well itself got contaminated, control of the situation would have been lost.

Anyone confronted with such a problem must determine a safe point beyond which the product in question is not satisfactory. In this case, the customers' practice of carefully testing the product before use enables them to detect contaminated paper and thus safeguard their product. However, since these tests may take days or even weeks to complete, they are unsatisfactory as control tests.

Therefore, Riegel turned to the use of Geiger tubes and counters, which, together with the other factors mentioned, have proved helpful in deciding when it is safe to manufacture these papers.

The speaker suggested that all paper suppliers who may have to cope with the same situation can similarly solve any problems by close cooperation of all concerned with the appropriate agencies of the Government.

PETROLEUM PACKAGING SEMINAR

Chairman, A. DOUGLAS MURPHY, *Esso Standard Oil Co.*

Tin Mill Product Qualities Required in Can Manufacturing—WILLARD B. EASTMAN, *Continental Can Co.* With emphasis on single-use, quart motor-oil cans, Mr. Eastman traced efforts to reduce costs on this volume item and the problems this has raised. Electroplating drastically cut tin requirements as did development of solders requiring a minimum tin content. When tin was cut off in wartime, other coatings were tried, but at the end of hostilities the petroleum industry was happy to go back to tinplate, with ¼-lb. electrotin the standard choice. Side-seam cementing developed during the war was continued by many. Early in 1951, the wartime CMQ (blackplate, can-making quality) was with us again, but packaging to prevent rust of sheets in shipment had been improved. Mr. Eastman reported that hot-melt organic plastics are currently under "enthusiastic study . . . and are almost certain to replace side-seam soldering" for 1-qt. oil cans, and perhaps eventually on larger sizes. This eliminates corrosive soldering fluxes, which should make it easier to produce over-all outside-lithographed cans that will stay good looking longer.

In breaking down the problem of choosing the correct plate for a given job, Mr. Eastman said this is a matter of selecting the most economical plate-enamel combination, considering strength and chemical resistance. Strength is a matter of thickness and temper, with the highest temper that can-making machines are able to handle usually chosen for can bodies because temper ordinarily doesn't affect cost. But thickness specifications must allow a safety factor to cover unavoidable small-area variations which may exceed theoretical allowances. It is, Mr. Eastman said, a matter of balancing unusable-can losses against materials savings. A period of commercial trial is the only really valid test of any combination.

In general, Mr. Eastman pointed out, we are entering an era when this type of can will be independent of tin, as tinplate and solder give way to enameled blackplate with cemented sides seams. The tinless can for motor oil will continue to be the can of choice unless it can be proved that tinplate would be more economical over the long run.

Present Trends in High-Speed Drum Manufacture—WILLIAM I. HANRAHAN and GEORGE S. STOTHOFF, *United States Steel Products Div., United States Steel Corp.* The 18-gauge, 55-gal. drum and the 5-gal. pail are the bread-and-butter items of the steel shipping-container industry, representing about 65% of the total number of containers produced. At present about 45 manufacturers with 60 plants are making drums or drums and pails and 25 other manufacturers are making only shipping pails.

Most drum-producing equipment turns out about 300 drums an hour, but the more modern equipment is designed for 600 an hour, with a production time of about 15 minutes from flat sheet to railroad car.

So-called "dirty" drums containing dirt, grease or mill scale, or rusty drums, have been sources of complaints. The Government specification, as described in JAN-C-490, calls for grease- and dirt-free, scale-free, rust-inhibited drums. This has been achieved by spray cleaning, followed by rust-inhibiting treatment with a water-insoluble zinc phosphate coating to the amount of 150 to 200 mgm. per sq. ft., the optimum amount. Lesser amounts may not give the requisite protection. To avoid loss of the protective coating along the side seam during welding, it is essential to treat the steel after fabrication rather than in the flat.

Materials Specifications and Testing of Paper Containers—W. B. Lincoln, Jr., *Inland Container Corp.* Fibreboard container specifications must comprehensively reflect carriers' rules and the standard practices of boxmakers, individual box plants and users. Mr. Lincoln pointed out that specification of materials alone has proved inadequate, for even the best materials can be ruined by poor fabrication. At the same time he cautioned against too restrictive specifications, which may hamper the boxmaker in providing the best and most economical containers for a given purpose.

The question, "How big is a box?" should not be the problem it so often becomes, Mr. Lincoln said. It is basically a problem of proper fit, which depends on establishing the correct size and then building a box to that size. Standardization of scoring allowances is not the total answer, as "correct size" in any given case may depend on personalities and plant situations. In the user's plant, Mr. Lincoln said, "The only approach I like is to load it—and if it fits it's right." Packing with the actual product is the best test, although use of a wooden dummy may be more convenient. Sometimes it is useful to cut away part of the loaded box to see what's going on inside under sealed conditions.

Dealing with qualified suppliers, said Mr. Lincoln, is the average user's best assurance of proper quality. A careful visual inspection by competent observers will detect the occasional slip. This careful visual examination should be supplemented by a Mullen test and possibly by periodic laboratory testing. The visual test should extend to the user's line and into the field.

DRUG AND PHARMACEUTICAL PACKAGING SEMINAR

Chairman, Dr. John C. Bird, *Lederle Laboratories, Inc., Div. American Cyanamid Co.*

Statistical Methods and Their Value in Control of Packaging Materials—A panel discussion. *Moderator,* Walter E. Spicer, *Lambert Pharmacal Co.*

Julian H. Toulouse, *Owens-Illinois Glass Co.* The glass container industry has just started to convert its present quality control to the statistical basis, said Dr. Toulouse.

To the greatest extent, the present developments are in the direction of acceptance sampling.

What must be understood, before going into any sampling agreement, is the concept of variation. In normal production, bottles with objectionable characteristics are not produced at regular intervals. If it were true that every 163rd bottle, for example, was objectionable, an automatic device could be set up to remove that bottle and leave a perfect remainder. Instead, as in every other application of statistics, the objectionable bottles are produced at random, sometimes only a few bottles apart and sometimes a thousand bottles apart.

To a certain extent, therefore, a conclusion based on a sample may have a certain element of risk of being in error. On one hand, there is a risk that a shipment of good ware will be rejected on the basis of the sample and, on the other, that a bad shipment will yield an occasional good sample and be accepted.

These risks are incorporated into each sampling plan. In the Military Standard 105A plans, the term "Acceptable Quality Level" (AQL) used throughout is the level which will be found acceptable in about 95% of the samples taken from exactly that quality.

It might be well to explain two words that will be used to describe sampling methods. One is the word "attribute," which simply means that each individual unit in the sample will be classified as to its attributes "good" or "bad."

The second type of sampling method is called "variables" because measurements to as fine a degree as possible or practical are made and the averages of these measurements are used, together with a value which measures the variability. Such methods call for a smaller sample, but are usually more exact.

In general, we now employ many more "attribute" plans than otherwise, particularly in visual-appearance quality, but as time goes on more "variables" plans will be applied to dimensional characteristics of bottles.

There is a national standard for the sampling of glass containers, under the designation C-224 of the American Society for Testing Materials, issued in 1949 and being currently revised.

In general, the Military Standard plans—and we, in turn—divide objectionable characteristics into three categories: critical, major and minor. These can be described as follows: Critical—when the objectionable feature may result in possible hazard to the ultimate consumer. Major—when the objectionable feature may result in loss or spoilage of the product, or in major loss of production. Minor—when the objectionable feature is one of appearance or esthetic value only.

On an attribute plan experience has shown that a minimum of at least 50 containers should be used in any measurement test and we advocate a double sampling plan based on 50 as the first sample and 100 as the second sample, using Military Standard AQL's for the present.

W. A. MacCrehan, *Chief, Quality Control, The Lord Baltimore Press.* With a series of control charts used by his company, Mr. MacCrehan illustrated a few of the defects that must be watched for in the production of quality printing, such as smearing, fill in, off register, etc. He showed how the recurrence of such defects could be observed by a simple system of charting and how the defects so charted may be related to the plus and minus limits of a statistical quality-control chart.

The charting of defects in printing production, he said, helps to make employees more quality conscious, provides a systematic procedure for detecting conditions beyond limits and, for management in general, helps keep a closer check on the quality of production.

Does Statistical Quality Control Used by a Tube Manufacturer Benefit the Tube User?—Robert Mahan, *A. H. Wirz, Inc.* Principal variables in collapsible-tube manufacture are diameter, length of wall section and thickness of wall, according to Mr. Mahan. Variations in length or thickness require repeated resetting of jaws on the user's filling machine. Elimination of these troubles in the tube manufacturer's plant involves the use of "average" and "range" charts which indicate the stability of a variable where variations exist due to a constant cause in any specified operations. The effort is made to produce a pattern of measurements known as normal distribution, in which 99.7% of measurements will fall within plus or minus three standard deviations from the mean or average.

A case history was given where a complaint about malformed tips and loose metal particles on the inside of the applicator tip led to the use of a statistical-control technique known as a percent-defective chart. These revealed that the then existing equipment was incapable of producing the desired quality level. This, in turn, led to a study of the equipment and its redesign.

Mr. Mahan's company forwards control charts with shipments and some buyers utilize them as part of their own inspection procedures. One buyer has reduced many of his inspection operations to the use of "Go-No Go" gauges with consequent economy of inspection costs.

Packaging Specifications: History, Development and Application—David M. Ashkenaz, *Wyeth, Inc.* The development of a packaging specification requires a multitude of integrated activities and decisions in a chain of which each link must be carefully forged, said Dr. Ashkenaz. The processes involved in the development of a specification may be divided into the following categories:

The primary decision to establish a particular package.

Accurate transmittal of the decision to those in charge of

package development so that they may proceed with the job.

Translation of general wishes into specific details compatible with production, promotion, etc.

Issuance of tentative specifications for approval or comments by all concerned.

Final issuance, in a form suitable for use by all concerned.

Many important points concerning all these steps were elaborated upon and illustrated with lantern-slide projections of actual developmental case histories and specimens of forms and procedures used by various pharmaceutical companies. Finally, Dr. Ashkenaz described a procedure designed to provide for all the required integrative activities.

Developments in Plastic Containers for Packaging—ARTHUR R. SCHETTEL, *E. R. Squibb & Sons.* Pharmaceutical packaging has changed because of plastics and we can expect more and more change-overs to polyethylene closures, bottles, tubes, films, bags and dispensers and polystyrene containers and appliances and the use of the newer plastic families as well as the "older" standbys like vinyl, said Mr. Schettel.

He listed all the leading plastic materials.

All these compounds are not, of course, used in actual packaging, pharmaceutical or otherwise, but practically all of them assist our performance in some way, he said, even to coating our hot plates and glue rollers for maximum production, and in use for our electronic equipment. He followed with complete detail of the uses for each plastic material in pharmaceutical packaging, covering hundreds of applications, and illustrated them with an impressive exhibit of packages from twenty or more leading drug houses.

Mr. Schettel summed up the observations on the exhibits:

1. Many squeeze bottles and practically all the urea inhalers are printed. Some packagers use paper labels, which are not entirely satisfactory and tear off easily. These polyethylene containers may be obtained with a treated surface in order to hold the label. Cloth labels are available, as is polyethylene glue for pony labelers.

2. The use of polyethylene drum liners is practically universal, with excellent results.

3. The quart and gallon polyethylene bottles are being considered by a number of drug houses. While they are presently expensive, there is an excellent future in store for them for both export and domestic use. At present, they are used primarily for acids.

4. The 5-, 6½-, 13- and 15-gal. carboys have definite possibilities, especially in the export trade.

5. The stability of most pharmaceuticals in polyethylene is quite satisfactory.

6. The use of polystyrene as a primary container for drugs is limited where water-vapor transmission is a product factor.

He urged plastics manufacturers to send samples of materials in the development stage to drug manufacturers.

In conclusion, Mr. Schettel challenged the plastics industry: In view of the tremendous strides made by the plastics industry, we shall look forward to tomorrow's announcement that a new material with the clarity of lucite, the price of polystyrene, the WVTR of polyethylene, the availability of vinyl and the ability to be autoclaved like Kel-F can now be shaped without molds.

Status of Parenteral Closure Problems—JOHN A. ELDER, JR., *Merck & Co., Inc.* The wide use of antibiotics in the last few years has increased demand for parenteral closures manyfold, Mr. Elder stated.

The technical work of the Committee has, until recently, been devoted to problems not related to product contamination because of the very wide range of products. Our work on the measurement of fragmentation of stoppers is not related to any specific product. We have developed a simple machine for standardizing the puncturing of a stopper. The wide range of sizes and colors of fragments has, however, made it very difficult to obtain agreement on the count of the fragments as determined by different laboratories or observers. Although some agreement can be reached regarding the relative merits of several types of stoppers, the procedure falls short of providing a reproducible test. We shall welcome suggestions and the cooperation of those interested.

The testing procedures being studied, or considered for future work, Mr. Elder said, may be of great help in the development of better closures. We believe that relatively simple tests can be developed for the purpose of maintaining the quality of stoppers once they are known to be satisfactory. Examination of stoppers in terms of ash, specific gravity and Durometer is now quite common and has helped the manufacturers of stoppers to provide a more uniform product. These tests have been useful in controlling the quality of well-known stoppers for specific products and can probably be readily standardized. Unfortunately these tests are of doubtful significance when applied to new rubber compositions or in considering stoppers for new products.

Truly effective testing procedures for contamination from stoppers must be related to the constitutents of the stoppers as well as the characteristics of the pharmaceuticals being packaged. We shall need a more thorough knowledge of the substances that may be derived from rubber stoppers. The suppliers of stoppers can be very helpful in solving these problems.

Manufacture, Storage, Handling, Packaging and Shipping of Radioactive Materials—E. E. BEAUCHAMP, *Radioisotope Development Department, Oak Ridge National Laboratory.* This talk could be more accurately titled "An Illustrated Tour of a Radioisotope Processing Plant," through the presentation of a movie film made at Oak Ridge which portrayed impressively the details of remote control designed for handling, packing and shipping the increasing quantities of radioactive materials now being used commercially in science, industry and agriculture. Various packages for shipment were also displayed.

FOOD PACKAGING SEMINAR

Chairman, DR. L. W. ELDER, *General Foods Corp.*

Packaging Materials and Packages: What the Food Industry Seeks—C. M. WOODCOCK, *General Foods Corp.* Despite the fact that the industry is "package conscious" today as never before, Mr. Woodcock said, the majority of men in the food industry are so occupied with the problems of producing and improving their own product that they have little opportunity to know or learn about the complex factors involved in packaging. They depend to a great extent upon package-material suppliers and, to a degree, upon organizations such as PI to do a major portion of their fundamental package-development work.

There is no property of a functional package that I know of which the food industry doesn't use some place. Moisture resistance; water resistance, greaseproofness; strength; stretch or shrink; gas and odor impermeability or, in some cases, permeability, transparency; opacity; printability; and a host of others—we use them all, either singly or in combination.

The factor which we must consider most often is moisture resistance. Most foods tend either to pick up or to lose moisture during storage. Specifically, what do food packers look for in moisture-resistant packages? We want a package which will keep our product's moisture content comfortably below its critical level during its normally expected shelf life in our most humid distribution area. One commonly used interpretation of this shelf-life requirement is one year in the Gulf Coast area.

A few products, of course, lose moisture in storage; in these instances, package moisture-resistance levels must be based upon shelf-life data in dry climates.

A product such as coconut requires a highly grease-resistant package. Somewhat less difficult but nonetheless serious grease problems are presented by products such as baked goods, cake

and pie-crust mixes, nuts and many others in addition.

Functional packaging materials incorporating gas and odor resistance are of particular interest to the food industry for many specific applications. A tea package, for instance, should hold in the product aroma and keep out foreign odors of all sorts. Packages for cereals present a different problem. Here, we are interested in a material which is moisture resistant and at the same time somewhat permeable to odors that may build up within the package. Butter, milk and other fatty products are quite susceptible to odor contamination and a good package should stop these odors.

Oil-Freeness in Foods—L. E. Hoag, *American Can Co.* A part of packaging development today consists of matching a set of product requirements with a corresponding set of packaging-material properties at the lowest possible cost. The accuracy of the matching, according to Dr. Hoag, is determined by the degree of precision by which product requirements and material properties are known.

The measurement of properties of materials has far outdistanced the precise evaluation of product requirements. It was to study the problem of the material being packaged that the Food Committee of the Packaging Institute was formed. The Subcommittee on Free Oil Determination was appointed at the founding meeting but the fact that a final method of its measurement is not ready for publication is evidence of the difficulty of the problem still in the process of solution.

Scientific literature is notably lacking in analytical methods for free-oil determination. ASTM has a method of determining the free oil in paraffin wax. Landrock and Proctor published a method for free oil in food in 1951.* Hoag and Nelson reported to the 1951 Forum about their studies and were not satisfied to suggest their method as a test procedure. The most serious objection to it lies in the fact that the amount of oil absorbed by a piece of paper from an overlaid layer of food is not a direct function of the thickness of the sample, thick layers transferring a lesser portion of the oil than thin layers. And the percentage of oil removed (recovered) is different for practically every product tested. Recoveries of oil varied from 90% in roasted peanuts to 4% in roasted coffee. Extra pressure on the sample usually gave a higher recovery of the free oil but is not a consistent factor.

The tedious procedure of periodic agitation of a sample lying on paper for 3 days at 125° F. will give a figure for free oil which is proportional to the amount of sample used. Continuous agitation is being tried. If it fails to yield a result truly indicative of the percentage of free oil present, then the effort will be in the direction of static contact between the paper at a constant area and the food sample in a rather thick or deep layer. The result yielded would be expressed in terms of weight of oil absorbed per unit area of contact at infinite sample thickness.

High relative humidities during a test will increase the oil pick-up. This is a troublesome factor because, in the interior of a commercal package, the humidity should be under control if the package is doing a satisfactory job from the viewpoint of water-vapor transfer.

The committee will welcome any ideas about what should be done about this variable.

How Far Should We Go in Solving the Food-Caking Problem?—R. A. Morck, *R. B. Davis Co.* The infallible methods of insuring freedom from caking are too costly, Dr. Morck said, and hence we must compromise to minimize the caking problem within the normal shelf life of the product. Although the greatest part of the solution to the problem lies within the province of food technology, the causes and effects also concern packaging men. Principal causes of unwanted caking of food are pressure, temperature and moisture, in the order of their increasing importance.

In preventing pressure caking, the theoretical and obvious way is to pack in small, rigid containers to avoid pressure on the product. If this is impractical, then the particles of the product should be large and uniform.

Insulating the package to prevent temperature caking is of doubtful value except for very short periods of exposure to improper temperature. Control of storage temperature between critical limits is better. Yet if the product has a tendency to cake because of minor differences in room temperatures, the remedy is to change the product.

Where moisture is the primary cause of caking, there are several ways of reducing the tendency to cake, although most of them are within the province of food technology rather than packaging: (1) Start with a dry product. (2) Eliminate or reduce soluble impurities that lower the product's equilibrium relative humidity; where ERH is high there is less tendency to pick up moisture. (3) Keep particles large and uniform in size; fine particles dissolve more readily. (4) Agitate the product during drying to break up the cohesion of the cementing material. (5) Cool the product; do not pack while hot unless moisture-free; pack only in airtight containers. (6) Keep the packing-room atmosphere very dry. (7) Add inert material to prevent caking, e.g., starch in powdered sugar. (8) Prevent access of moisture into product after packaging. The last is strictly a packaging remedy. A bone-dry product packed in a bone-dry air-conditioned room into a hermitically sealed can cannot cake—but it is usually too costly to do it this way to be feasible.

Odor Gain and Loss—George Garnatz, *Director, The Kroger Food Foundation.* At its meeting on October 23, 1951, the Food Committee of the Packaging Institute received, among suggestions of new problems worthy of consideration, one designated as susceptibility to odor loss or pick-up. Subsequently, it was recommended to and approved by the committee that first a survey should be made of the conditions in which odor gain and loss are factors.

Accordingly, a subcommittee was appointed to launch such a program. The program was initiated early in September last, in the form of a survey, by means of which it was sought to assemble information regarding specific problems encountered in this area by the food industries; the types of foods involved; methods employed in measuring odor gain and loss in packaged foods; and methods for evaluating packaging materials and adjuncts in conserving odor of the contained product and protecting it against contaminating odors.

The survey has developed, Mr. Garnatz reported, that virtually all types of food are involved and that the problem of odor gain and loss is a complex one, not only because of the very large number of types of odors that may be transmitted to or from a package, but by the apparent fact that interrelated with it are water-vapor and gas transmission, moisture level, environmental temperature and humidity, as well as air movement around the package. There is thus cause for the general sentiment that each odor problem must be treated as an individual one.

It would appear that odor gain and loss in packaged foods can stem from four causes. The packaging material itself is referred to more frequently in the survey than any other cause as the source of odor gain. Some reference was also made to the ink printed on packages and its possible contribution to contaminating odors. Consequently, most of the methods offered by the respondents involved dry smelling, the dauber or wet-smelling test, water-soaking test, odor transfer to oil and water, odor transfer to chocolate and the "sandwich" test. These tests will not be described, since they may be found in the August, 1950, issue of Modern Packaging magazine in the article, "Paper-Package Odors," by L. B. Sjöström. There also came to hand a suggested test method for detecting odor of packaging materials, prepared by L. E. Simerl. A third cause is em-

* See "Free Oil In Packaged Foods," Modern Packaging, Aug., 1951, p. 107.

bodied in the suggestion that chemical activity between the components of a packaged food, or between the food and a gas which has permeated into the package, may give rise to unwanted odor developments.

The fourth cause for odor gain and loss is, of course, the permeability of the package to odor vapors. It is in this area that the greatest need and the most baffling complexities exist.

It has been suggested that eventually there could be developed a series of odorous vapors which might be used in permeability studies involving films and other packaging materials and that values thus obtained could serve as a guide to the protective quality of the packaging material for certain types of food odors.

Dovetailing with this is another suggestion that there be measured and compiled the susceptibility to odor adsorption or absorption for a comprehensive list of food products.

PRINTED PACKAGING MATERIALS SEMINAR

Chairman, E. H. Balkema, *Colgate-Palmolive-Peet Co.*

Progress in Testing Fading of Printed Packaging Materials by the Fade-ometer—George Cramer, *Sinclair & Valentine Co.* Certain odd or apparent variations in the permanence of printing inks when exposed to ultra-violet light in the Fade-ometer have been traced to color changes or fading of the paper upon which the ink has been printed. The Subcommittee now recommends the testing of inks for fading on a non-fading paper such as Eastman Kodak Co.'s "Standard Single Weight Photographic Base." This paper is procurable in large lots but the Subcommittee has yet to work out a system for its distribution and sale in small lots for testing purposes.

In response to outside criticisms of the original proposed procedure, the Subcommittee has made several modifications in the revised version:

(a) Instead of specifying a particular manufacturer's instrument, the revision specifies the use of that instrument or its equivalent.

(b) The Subcommittee promises to experiment with a black panel thermometer and, if this is found more satisfactory, may specify its use in the next revision of the test procedure.

(c) The revision calls for a maximum RH of 35%, but if the use of the black panel thermometer proves satisfactory, it may require a further rewording of the RH specification.

(d) The chart of data in the PI Printing 1p-51, giving equivalent days of exposure in Washington, D. C. to hours in the Fade-ometer, has been questioned. Because the data were gathered some 20 to 30 years ago and do not compare with today's figures, the chart has been eliminated.

(e) Liaison with a committee on testing from the American Association of Textile Chemists and Colorists and from the Committee on Lightfastness of the Society of the Plastics Industry is being planned.

Further Progress on Test for the Effect of Alkali on Printed Packaging Materials—Albin H. Twardowicz, *The Lord Baltimore Press.* In a progress report on the proposed alkali test for printed packaging materials, PI Printing 1p-51, Mr. Twardowicz reviewed the purpose of such a test and stated that it should not replace the six-month storage test that should always be carried out even when the presumption is that the ink is safe from discoloration by alkali.

The proposed test procedure had been distributed at the 1951 Annual Forum and criticisms had been solicited. One criticism was that the test drop of alkaline solution would evaporate and thereby become more concentrated. The answer seems to be that dilute concentrations produce more of a reaction than concentrated solutions.

Another criticism is that the test should specify the temperature and relative humidity at which this spot test should be conducted. Hence the Committee is studying the effect of variants of these conditions on the reproducibility of test results.

Toothpaste tubes having an alkyd type of coating and shaving cream tubes coated with a vinyl-type material showed no effect on the finish under any concentration of the alkali used in the test. The same seemed to be true for most types of lacquers on painted metals, but for certain lacquers on paper or paperboard cartons there is still some question as to the alkali resistance of the lacquers over inked surfaces. Alkyd-resin lacquers over inked surfaces on paper will show puckering of the lacquer film and discoloration on the back of the paper when the alkali is as dilute as 0.1%. On the other hand, stronger solutions (0.5 and 1.0%) on yellow, red and black gloss inks without varnish caused slight fading of the yellow only. Intermediate concentrations caused dulling and roughening, but no fading. These and other experiences suggest that the alkali test is more severe than the product itself on much longer exposure.

Evaluating Resistance of Ink on Printed Packaging Materials to the Product in the Package—L. K. Burnett, *The Ohio Boxboard Co.* Relatively few companies make products that have sufficient effect on printed material to warrant testing, according to a questionnaire study made by Subcommittee No. 5 on Resistance of Ink on Printed Packaging Materials to the Product in the Package, Mr. Burnett reported. Upward of 700 members of the Packaging Institute received the questionnaire and 62, or 9% responded. Of these, 46 were users of printed packaging materials, 5 were suppliers, 4 were commercial or Government laboratories, 1 was a machine builder, and 6 were unidentified.

Of the respondent users, 12 individuals, or 26%, were currently testing their printed packages with the product inside, and 4 others indicated they might be interested in future testing of this property. In other words, only 2.3% of all those who received the questionnaire indicated that they are now testing or plan to test the product resistance of their printing.

In view of these circumstances, the Subcommittee recommends retaining the test in the *Proposed* status and that the Subcommittee itself be either replaced or augmented by more users until greater interest is shown in this form of test.

Evaluation of Color-Master Differential Colorimeter in Color Control—F. L. Wurzburg, Jr., *International Printing Ink Div., Interchemical Corp.* Last spring your chairman requested the Color Control Committee to inform him of the subject on which it could report at this Forum. At that time the Committee had started looking into a recently announced new differential colorimeter, said Mr. Wurzburg.

Arrangements were made to obtain one of the instruments for evaluation and we had hoped to be able to complete this evaluation in time to report on it at this meeting.

As a result of the delays, however, and also because of the "bugs" that inevitably appear to creep into first production models, it has not been possible to arrive at any definite conclusions or recommendations concerning the instrument at this time. Your committee will continue to work with the instrument and the manufacturer to complete the evaluation. We hope to be able to report on it later.

First-In-First-Out Control of Use of Packaging Materials—Gilbert J. Myers, *Production Manager, Norwich Pharmacal Co.* Today, with increasing Government control of labeling and advertising, Government regulations have become the most important reason for some type of control over the use of printed packaging materials, said Mr. Myers. In the pharmaceutical industry it is not unusual to have two, three or more pieces of printed material for each package of several hundred

products. Furthermore, labels, cartons, inserts and certain other printed materials do not keep indefinitely, even when stored in air-conditioned rooms.

A good system of records, administered by a person willing to become familiar with the idiosyncrasies of printed materials, is needed to control the use of packaging supplies. Furthermore, top management must see that the best system and personnel are made available.

Every item at Norwich is assigned a code number at the time of writing specifications. The code number then becomes a part of all requisitions, purchase orders, stock control and production records. The vendor is required to stamp or imprint the code number either on each item or on each containing bundle or case. Designation of this specification number becomes habitual for all personnel concerned.

The second step in First-In-First-Out control is making a record of the sequence in which the materials were received. These two types of identification—code, specification or stock number and receiving number—must be posted at least daily in the records. Otherwise, the system cannot operate properly.

Proper Ways to Handle and Store Printed Packaging Materials in the User's Plant—C. C. SUTTON, *General Foods Corp.* Handling of roll paper stock has yielded considerable information, said Mr. Sutton. Damage to rolls from dropping and rough treatment is a major cause of trouble which many cooperating firms believe could be avoided by greater use of palletized unit-loads. Many user firms forget to use well-known precautions: storing and transporting rolls on their ends, using core plugs and end protectors; keeping rolls in protective wrappers during storage; restricting stack height during storage; etc.

First-In-First-Out inventory control is important because of the adverse effect of aging on paper stock whether printed or not.

Handling of labels, sheets and boxes presents problems that differ from roll stock. To avoid mishaps, bundles should be small—not over 500 units—and bundles should be reinforced top and bottom, and separated in the middle (or several places) by cardboard inserts cut to the same size as the stock, and the bundles should be boxed or cased in sturdy containers.

Storage height in stacks must be sensibly controlled, because waxed and lacquered labels will surely block under excessive pressures in high stacks, and folding cartons packed on edge will bend and warp.

Considerable information is available on the handling of cellophane and certain other films but very little is available about polyethylene, saran and Pliofilm.

Lithographed cans are subject to physical damage from scratches on sharp corners in production lines—matters that deserve close inspection and corrective measures.

Should the Producer of a Printed Packaging Material Specify Its Storage Conditions and How It Should Be Handled for Delivery to the Packaging Line?—W. A. MACCREHAN, *The Lorld Baltimore Press.* Three basic factors are involved in this problem, said Mr. MacCrehan. First, what are the customer's facilities for storage? Big companies have packaging engineers who know procedures for correct storage and handling of materials, but many smaller companies do not. Second, the type of package and the kind of machines on which it is to be used are of critical importance in giving instructions for storage. Third, the end selling price is always a consideration. Two or three dollars a thousand added to the cost for proper handling is sometimes not acceptable to the user.

The supplier is on delicate ground in giving specifications for storage unless he knows all the plant conditions. Otherwise it is impossible to provide a general procedure that will apply to all situations. The speaker emphasized the importance of proper controlled temperature and humidity and stressed again the essentials of a good "First-In-First-Out" control system.

Technical and Economic Factors in Printing on Glass—CRAIG R. CAMPBELL, *Lederle Laboratories, Inc., Div. American Cyanamid Co.* The report, "Printing on Glass," is a progress report of Subcommittee No. 6 of the Printed Packaging Materials Committee and contains the actual experience of five firms represented on the Subcommittee, although it contains no recommendations as to methods, procedures or equipment, explained Mr. Campbell. After briefly describing the two types of glass-printing equipment—for printing on flat surfaces and for printing on cylindrical surfaces—he mentioned that both flat and built-up letters may be placed on the glass. For pharmaceutical ware that is not displayed on counters flat lettering is satisfactory, but on cosmetic containers the eye-catching feature of raised letters contributes to consumer appeal.

Advantages of printing on glass were reported as follows: (1) visibility of contents, (2) speed of marking the container, (3) elimination of label inventory, and (4) speedy procurement of rubber plates. On the other hand, disadvantages listed were: (1) greater difficulty in reading, (2) smudging, which occurs often when the printed containers are placed in cartons, (3) the fact that the print can rub off, (4) difficulty of inspection.

Silk-screen machines for ampoules were reported as basically alike, and air driven or foot powered, they operate at nearly equal rates, with speed of production governed only by the skill of the operator. A fully automatic machine in a bottle-making plant operates at 60 a minute with one operator, compared to foot- or air-driven machines at 20 to 35 a minute. Ceramic decalcomanias can be applied to glassware by a labeling machine, after which the backing is removed by hand and the container fired. Decals are more expensive than silk-screen printing but where a multicolored job is required, the cost comes into line, with 4-color printing approximately the break-even point.

Evaluating Gloss of the Printed Package—T. ROSEVELT, *Sun Chemical Corp.* The ultimate goal of Subcommittee No. 8 would be to recommend a single instrument and a standardized testing method for use in evaluating gloss of the printed package, said Mr. Rosevelt. The Subcommittee limited its scope to printed ink films, single or multicolored, and to overprint films or to coatings over printed or unprinted materials. It excluded all uncoated or unprinted materials, such as boxboard, paper and metal.

Mr. Rosevelt stressed the need for more scientific workers on the Subcommittee with laboratories and instruments available, and he called for volunteers.

During his report, he described the six basic principles on which some of the better known instruments operate: (1) the Orstwald method, (2) the objective Glossmeter, (3) the subjective Glossmeter, (4) the gontophotometer, (5) polarization, and (6) distinctness of image measurement. Optical experts who have devoted years of study to the subject, he said, take a dim view of the hope for a single instrument which will give numerical results that conform to ratings of gloss by the eye. He expressed the Subcommittee's hope that it may find a photometric method which will give results comparable to visual ratings in the greatest number of cases.

Evaluating Printability of a Material—B. A. GAFFNEY, *New Haven Pulp and Board Co.* In the printing of cartons on paperboard, as on any other material, our product is rated on one factor: uniformity to standard, said Mr. Gaffney. This uniformity is obtained through the consistent performance of man, machine and material. To attain this desirable uniformity of material there are certain basic, in-process factors to control.

Our purpose in holding paperboard within range allowances that have been proved satisfactory is to eliminate the "who done its?" between printer, ink supplier and board mill superintendent, and to manufacture and ship cartons of acceptable quality level.

A fine halftone or multicolor-process printing job certainly

demands a smoother printing surface than the simple line design. Since the density at given caliper or thickness will affect the smoothness of the sheet, it has become customary to express the basis weight along with caliper when ordering boxboard. An excessive caliper variation may result in feeder trouble, break-ups in printing and other failures.

The importance of moisture content in paperboard as related to its printability is a complex question. An ink can be modified to speed up or retard drying but such corrections cannot be made from sheet to sheet. Such failures as offset, color variation and off-register printing are often caused by lack of uniformity in the moisture content of the stock.

Brightness is sometimes simply thought of as a numerical reading on a G.E. or a Photovolt machine. This line of thinking is essentially correct, but whiteness must be controlled if the brightness readings are to mean anything. Ink proofs run on a small press using a cross section of the stock made for the order are a help. They give an indication of trouble if trouble is on its way.

When printing gloss ink, it is usual practice to increase the beater size as well as the surface size on the paper machine. The amount of size added cannot be a matter of guess work. The important factors that will affect sizing are purity of the pulp, the water used, the degree of beating and sheet formation, the point of addition of size and alum, temperature of the stock, pH of the stock, the rate of water removal and the contact time of size and alum with pulp.

The penetration tests made at the dry end of a paper machine are a double check against the wet end and machine performance. Many solutions are being used for this purpose, but whatever the solution or the method employed, we must be certain that the range of absorption is within the latitudes that have been proved to result in quality printing.

The tests we have touched upon—namely, caliper, weight, moisture, brightness, pick and penetration—can all be easily systematized. Other reasons for constant inspection are such things as felt hairs, slime spots, calender scabs, fuzz and slitter dust. Accurately evaluating the printability of paperboard is a difficult task. Improvements in tests and methods may make the problems easier in the future but certainly of no greater challenge than they are today.

Evaluating the Resistance of Printing Inks to Dry Rub—Lewis R. Ayers, *Robert Gair Co., Inc.* (The complete text of this paper will appear in a later issue of Modern Packaging.)

A Better Name for Aniline Printing—A Progress Report—John Cozza, *President, Cello-Masters, Inc.* About 18 months before the presentation of this progress report, a subcommittee of seven persons was created in the Printed Packaging Materials Committee. Its object was to recommend a name to replace "aniline" that would describe more accurately the so-called aniline printing method. This is the rotary printing method using rubber plates with inks that are often referred to as being 100% pigmented and formulated without the addition of "aniline" dye stuffs, Mr. Cozza said.

The Subcommittee attempted to reduce some 200 suggestions to six worthy names and to publicize a selection of three names through various trade publications in each of which a ballot was included to be mailed to the chairman. The tabulation presented by Mr. Cozza at the Packaging Institute Forum October 21 revealed that the name "Flexographic Process" appeared to have the edge about two to one.*

Profitable Uses of Codes on Packaging Materials, Ira Gottscho, *President, Adolph Gottscho, Inc.* Coding of consumer packages is carried out, according to Mr. Gottscho's report, to: (1) comply with Government regulations, (2) permit accurate rotation of stock on retailer's shelf or in manufacturer's or distributor's warehouse, (3) facilitate pick-up of goods by salesmen (where items are held beyond expiration date), (4) facilitate control of product quality, (5) reduce product-liability insurance, (6) identify individual packer or production line, (7) help assure consumer confidence and maintain competitive advantage, (8) assist in controlling flow of products from processing plant to consumer, (9) serve as a tracer of consumer complaints, (10) permit a check on source of incoming packaging materials, and (11) help protect manufacturer against law suits.

In addition, he said, coding makes it possible to carry out a First-In-First-Out policy, segregate lots, control inventory, and identify source of processing.

The report went on to consider the objectives of a code, concluding that it may be set up for three primary purposes: To enable manufacturers to control product quality, salesmen to remove goods from the retailer's shelf held beyond expiration date, and processors to determine sources of food ingredients.

Grain Direction of Labels for Sheet-Fed and Roll-Fed Labeling—Earl C. Lenz, *Vice President, Paisley Products, Inc.* Grain direction of paper labels, Mr. Lenz's report stated, affects labeling operation primarily because of its relation to the curl induced in the paper label by varying moisture content. The differential expansion or contraction between the face and back of the label determines the curling tendency. The degree of curl depends on its density, soft papers conforming easily to the labeling surface, while dense and rigid papers may have a pronounced curl after differential expansion or contraction occurs. The drier the labels, the greater the tendency to curl when dimensional differences exist between front and back sides.

When paper is dampened, the fibres expand less in the grain direction than in the cross-grain direction. Such moisture may come from adhesives used or from experimental tests. The grain exists in paper because the fibres have a tendency to line up in the direction of travel on the paper machine, even when the attempt is made to counteract this tendency by crosswise shaking of the forming wire as the pulp suspension is spread on it.

Structural curl, also related to grain direction, comes from permanent changes in the original sheet caused by winding up of the paper at the dry end of the paper machine. Paper sheeted from large-diameter reels will usually lie flat, whereas sheeting continued after the diameter of the reel has become small will give sheets possessing a permanent set known as "reel curl."

When labeling flat surfaces, automatic sheet feed presents no grain-direction problems. But when labeling around clyindrical or sharp-angle containers, the question of grain direction and hence the problem of curl become quite important.

Specifications covering tests of label stocks used by Anheuser-Busch, Inc., for beer labeling were attached to the report.

ADHESION SEMINAR

Chairman, Miss Maurine Ponder, *Joseph E. Seagram & Sons, Inc.*

Adhesion Problems of the User—Carr H. Parsons, *Lederle Laboratories, Inc., Div., American Cyanamid Co.* Mr. Parsons outlined the basic problems of users of liquid adhesives which led to the formation of the PI Committee on Adhesion in the spring of 1951 with Miss Ponder as chairman. This committee's meetings have been limited to users, but ultimately suppliers will be invited to active participation. A subcommittee, of which N. D. Ellis of Anheuser-Busch, Inc., is chairman, has completed a draft of a dictionary of adhesion terms. Dr. O. S. Plantinga, of Johnson & Johnson, Inc., is chairman of a subcommittee on Standardization of Testing Procedures. Mr. Parsons, as chairman of a subcommittee preparing a manual of procedures for handling glues in users' plants, outlined the present status of his subcommittee's work, with emphasis on the recommendation that a proper glue room, well equipped and lighted and placed

* See p. 211.

in the hands of competent personnel, can be greatly helpful in eliminating certain types of glue problems.

Variables in Purchasing Adhesives for Paper Converting—WILLIAM J. RICE, *Central States Paper and Bag Co.* Mr. Rice said that until a "universal" adhesive comes along, users will have to deal with some important variables. The "four M's are: (1) materials, including the adhesive itself and its effect on the packaged product, or the reverse; (2) machinery; (3) men, particularly machine operators responsible for setting and adjusting machines; and (4) maintenance of machines, including cleaning. Mr. Rice suggested that adhesive suppliers can often help, without divulging confidential information, by submitting adhesives that have worked satisfactorily on similar equipment elsewhere, although this is not a universal solution.

The selection of an adhesive for converting must follow the results of laboratory testing and any modifications needed to enable the adhesive to run on the equipment. The availability of too few instruments to test adhesive properties still handicaps the science. Mr. Rice listed 18 variable characteristics that require evaluating in selecting adhesives for converting. He stressed the importance of storage and aging tests, as well as knowing the details of the packaging end-use of the converted material. He also commented on the obligation of the supplier to inform users of changes in formulation, particularly when potentially dangerous solvents are involved.

Mr. Rice gave suggestions for proper handling of adhesives in users' plants and recommended a drum-lid gasket made of connecting-cell sponge rubber that is saturated with water before closing the drum.

The Role of the User, Machine Manufacturer and Supplier in Selecting Adhesives—GEORGE W. GRAY, JR., *Arabol Manufacturing Co.* Mr. Gray stressed the place of glue as a major raw material in packaging operations. The glue supplier should be called in by the user and be fully acquainted with the project; samples of the materials to be adhered and an opportunity to inspect the machines to be used will help him, or his company's technical and research laboratory staff, in making a recommendation. Any unusual conditions the finished product is expected to encounter should be described to the adhesive supplier. Responsibility for good packaging can be divided equally between adhesive user, supplier and machine manufacturer, Mr. Gray said. The user will simplify things for himself by giving all details of the job, while it is in the designing stage, to the glue man and the machine man. He will need to make machine tests with both glue supplier and machine manufacturer for the specific conditions under which he intends to operate. The machine manufacturer's responsibility is to be sure that the machine is basically the appropriate machine and, if possible, that the glues normally used on his machine will fit the individual needs of the user. Contact should then be made with the adhesives supplier to see that he agrees.

The Selection and Efficient Handling of Adhesives—WILLIAM SEDERLUND, *National Adhesives, Div. of National Starch Products Corp.* Unless the user provides the supplier with adequate information about the job the adhesive is to do and the conditions of use, there is a tendency for the supplier to suggest the "best possible product" in self defense. But with really complete information, Mr. Sederlund pointed out, the supplier may be able to suggest an adhesive which will do the job efficiently at a lower cost.

Suppliers' representatives know the proper questions to ask to get this needed information, but Mr. Sederlund recommended use of the problem-data forms in written communications which most adhesive companies have. As an example of the accuracy of the information required, the user should not simply note foil but should specify raw foil, lacquered foil, etc., or use manufacturers' code designations.

Mr. Sederlund said that suppliers should label their adhesives to indicate clearly the temperature range for safe storage and other pertinent information, and the user should acquaint himself with these recommendations. A light, clean glue room with hot and cold water and a steam hose is worth while, and adequate mixing equipment should be provided. A mere trace of some vegetable glues will coagulate resin emulsions; therefore it pays to avoid contamination. This may be as simple a matter as having a separate hand-mixing paddle for each type of glue used. In any case, a dark, dirty glue room in charge of unqualified personnel is bound to be reflected in greater-than-average numbers of glue problems.

Mr. Sederlund went on to describe various types of mixing equipment and also discussed the handling of diluted glues by gear pumps or compressed air for pipeline transfer to point of use. On the subject of dilution, he recommended the Zahn viscosimeter (for low viscosities) or the Brookfield (for a wide viscosity range). Measurements of specific gravity bear no direct relation to viscosity, he cautioned.

The Machinery Manufacturer's Viewpoint—RICHARD WELLBROCK, *New Jersey Machine Corp.* One fact complicating the adhesives problem is that some machines require the glue to do two jobs—not only to stick, but to perform certain mechanical functions as well. Mr. Wellbrock described in detail how certain machine designs require the glue to perform such tasks as holding a label in position temporarily until pressure is applied, or even to pull a label off the bottom of a stack. These mechanical forces of pull, hold or release which the glue may be called on to provide depend, at any given moment, on the nature of the adhesive and the rate at which evaporation converts the glue from a wet solution to a dry bonding layer.

Mr. Wellbrock showed a set of graphs of a type which might be used to chart, in relation to time, the changing characteristics of a glue film as its moisture evaporates. Precise versions of such charts, he said, would show for a given glue just where in the drying-time cycle the various characteristics are available. Using the charts, in which the rate of evaporation was arbitrarily assumed to be a straight-line function of time, he was able to show the importance of having the timing cycle of the machine "in phase" with the glue's drying-time cycle, so that the machine demands a particular characteristic from the glue only while the drying glue possesses that quality to a sufficient extent.

Problems may arise—for example, if a machine should require a glue to perform two jobs requiring two different characteristics, and these characteristics are called for in reverse order from that in which they occur in the glue's normal drying cycle, successful operation will probably be possible only in a narrow time zone, if at all. Other problems are variations in dilution by users, and atmospheric variations, which may throw a glue's drying cycle out of phase with machine requirements. The absorptive power of materials and penetration of materials by water may also complicate the picture.

Machine manufacturers are justified in requiring mechanical characteristics of glues where such requirements lead to lower cost, increased efficiency, faster change-over and the like in machines. But this obligates machine makers to be equipped and staffed to test adhesives and to help users in their selection. A machine maker must design machines that require as few mechanical functions as possible from the glue, and where these are necessary, he must ask for them in a logical sequence.

PRODUCTION SEMINAR

Chairmen, E. R. HAMM, *Sharp & Dohme, Inc.* and E. F. DIVAL, *Corn Products Refining Co.*

Maintenance and Repair of Packaging Equipment—R. Ross KITCHEN, of *The Charles H. Phillips Co. Div., Sterling Drug Co.,* reported on a survey of over 50 companies. All companies

alike, Mr. Kitchen said, are plagued with breakdowns from time to time and all are duly concerned both with minimizing them by means of speedy repair and eliminating them as far as possible through preventive maintenance programs.

Most companies have floor mechanics who handle repair of minor breakdowns on the spot and machinists with machine-shop facilities to make major repairs and to make replacement parts when necessary. Another factor of security is to have stand-by facilities in working condition.

The two most generally used preventive-maintenance measures are a lubrication program and a periodic overhaul of all equipment for the replacement of worn parts. The lubrication program is most important and should be adopted by all plants regardless of size. The periodic overhaul is advisable where adequate stand-by facilities or slack seasons permit.

One suggestion that was thought valuable was the painting of all lubricating points a contrasting color. They may even be painted different colors to indicate the frequencies of lubrication. A good oiler who is on his toes can aid preventive maintenance by being on the lookout for worn or loose parts.

Cleaning, in itself, actually is a preventive-maintenance measure when it is done thoroughly, since it is evident that dirt and moisture can contribute to excessive wear and improper lubrication. It is also necessary for another reason—to eliminate contamination of one product by another or through unsterile conditions. In the pharmaceutical and food packaging plants, the control department is usually the one that has to be satisfied as to the cleanliness of the lines, but the packaging department usually has the final say in the proprietary and cosmetic plants.

EDWARD C. TOWLE, *Sharp & Dohme, Inc.*, presented the Committee's data on set-ups, down time and costs. Most companies did not have good data on set-up time. A few furnished average set-up times, but not in a form which provided easy comparison with other companies; there was little agreement as to what operations should be included under set-up.

Practically all companies keep records of down time and in most cases supervisors are required to explain the cause of each down time. But again the type of figures presented made comparisons between companies difficult. Most of the down time records are kept by line personnel; much value was seen in the use of mechanical recorders, but it does not appear that these are as yet generally used. We have recently devised a simple method of recording down time at Sharp & Dohme, based on the use of two clocks. The first clock gives the total amount of time the equipment potentially should have operated; the second gives only the down time and the second cannot operate without the first.

Not all companies had good methods of keeping records on cost of material and labor for maintenance. In those companies reporting, the percentage of the budget applied to preventive maintenance varied from 40 to 80%. Set-up labor cost varied from 2 to 36% of the total productive labor cost of the production line.

Planning and Purchase of Packaging Equipment—GEORGE D. HARRISON, *The Mennen Co.* Before we decide to mechanize any operation there is need for fundamental thinking. Can we lower the cost of present hand operations by making better use of human effort? To illustrate the economics of such an effort, assume an operation performed by six operators at a cost of $18,000 a year. If a fully mechanized operation could be purchased for $36,000, its cost could be saved in two years. But if the manual operation were better laid out, the work simplified, and operators better trained so that two operators could now do the work of the previous six, the cost of the operation would come to $6,000 instead of $18,000. The proposed $36,000 purchase would not be as attractive for it would now require six years to pay for itself through savings.

Next to be considered is the probable volume to be handled by the new equipment, for unit-cost figures must be projected on a sound basis. Sales-department estimates must be regarded realistically, not enthusiastically.

A third matter to consider is how the new or proposed product or package can be handled in production at reasonable cost. The producing end of a business must be integrated with the planning and designing end to produce the best package at the lowest possible cost.

The fourth matter is really the keystone—the equipment itself. The selection, use and maintenance of equipment are major problems confronting packagers and manufacturers. The actual work of investigating new equipment can be better done by departments and personnel more directly connected with production than, perhaps, the purchasing department, such as the engineers, maintenance men and possibly operators.

C. O. SMITH, *Hiram Walker & Sons, Inc.*, pointed out that failure to obtain equipment which will perform satisfactorily is usually due to an incomplete understanding between the vendor and the purchaser.

The only way to avoid this is to have complete specifications as a part of the purchase contract. Representatives of the purchasing, engineering and production departments will have to write the specifications. Many parts of the specification will have to be negotiated between them and agreement reached.

What is to be gained by writing the specifications? The purchaser will be assured that the equipment will equal the performance which he has set forth in his justification to management; the equipment manufacturer will know exactly what is expected of him, and it will eliminate volumes of correspondence and confusion.

Mr. Smith then presented a lengthy check list, "What Should Be Included in the Specification?" which subcommittees of the Production Line Committee have prepared.

Useful Gadgets for Production-Line Equipment and Packaging Machinery—VICTOR C. HALL, *Sharp & Dohme, Inc.* About six years ago, due to the increasing demands from our production and research divisions for so-called gadgets, the management of Sharp & Dohme believed it would be a sound investment to organize an engineering development department. We set up a small shop having only basic tools and mechanized equipment. The personnel consisted of a development engineer and one gadget maker. We have grown until we now have quarters covering upwards of 2,000 sq. ft. Our equipment includes several lathes, milling machines, drill presses, grinders, band saws, apparatus for sheet-metal forming, heat treating, arc and spot welding, and the necessary assortment of instruments for test purposes. In addition, we have recently installed a test laboratory, a fairly large air-conditioned room wherein temperature and humidity may be accurately controlled over a wide range.

Our belief that a gadget shop could be promoted to such an extent that it would pay substantial dividends has been borne out. A survey of the past six years has disclosed that the savings and earnings accrued run well into seven figures and are proportionately growing each year.

GEORGE M. WOODRUFF, *General Foods Corp.*, showed a series of 11 slides illustrating gadgets developed by Post Cereals maintenance and operating personnel to speed packaging production at the Battle Creek plant. Shown and discussed were: (1) an electrically controlled air cylinder used for alternately diverting a high-capacity line of filled jars into two alternate capping machines; (2) an electric-eye device for detecting the failure of paper to feed properly on a wax-overwrap machine; (3) a graduated timing dial sometimes used for the precise setting and adjustment of automatic machines; (4 & 5) a slack-fill detection device for kicking out improperly filled cereal packages; (6 & 7) a code-marking device for overprinting on waxed overwrap papers as they feed into the wrapping ma-

chine; (8 & 9) a level-control device for limiting the number of screw caps permitted in the sorting hopper of a Capem capper and (10 & 11) auxiliary tucking fingers to permit running oversized cartons not otherwise handleable on certain old-style packaging machines.

CHARLES BOWMAN, *Gerber Food Products Co.* We operate very high-speed packaging lines at Gerber's, Mr. Bowman said, and we have a very great number of "gadgets" integrated into our production lines. I shall confine my remarks to one tin-labeling line operating in excess of 600 cans a minute. This line is all Standard-Knapp equipment and consists of a cage dump and special eight-lane unscrambler, heavy-duty labeler with continuous label feed, single-stroke FF packer, 429 glue compressor and four-head imprinter.

Mr. Bowman then showed slides illustrating: (1) a gadget which cuffs off an occasional excess can riding on top of the closely packed cans rolling away from the unscrambler in a gravity chute into the labeler and returns it to the unscrambler; (2) a device which automatically detects and stops any can leaving the labeler having a double cap or improperly rolled seam; (3) a knee switch operating a solenoid to trip the clutch on the case packer to permit faster speeds; (4) a turning device on the conveyor to the case sealer which automatically positions each alternate case in the opposite direction, to facilitate Gerber's method of gluing together two 24-can cases by interlacing flaps on top and bottom; (5) a device to make sure that only paired cases enter the timing chain of the sealer; (6) a special flap tucker on the case sealer to make sure that all four interlocking flaps are in place; (7) means of imprinting all six exposed panels on the twin case by extending the quadrants on the regular four-head imprinter and placing a double logotype on the two 2-panel sides and (8) a gadget to feed automatically the proper amount of ink to the inking rolls, which is simply an adaptation of the coil-spring paste belt such as is commonly used on labeling machines.

EQUIPMENT PACKAGING SEMINAR

Chairman, R. D. COURTRIGHT, *International Business Machines Corp.*

Packaging of Sound-Recording and Reproducing Equipment—J. R. HOPKINS, *Dictaphone Corp.* Mr. Hopkins said that Dictaphone Corp. has the same problems of all manufacturers of delicate instruments and equipment, and some special problems as well. One of these is the nature of the Dictabelt records, made of a special cellulosic plastic in a tubular-extrusion process. This material takes a permanent set if subjected to prolonged stacking pressure and is subject to surface abrasion, which produces service noise, when it comes in contact with "most economical packing materials" during vibration in shipment. Interleaving of silicone-treated paper was a satisfactory but expensive temporary solution, he said.

The present improved package for Dictabelts starts with 10 nested belts in a flapless expansion bag of machine-glazed kraft, with the glazed side in. Ten of these bags are packed in a two-compartment corrugated folding box, with a central divider that keeps the belts from deforming under their own weight, keeps the bundles of belts on edge (the ideal storing position) and reinforces the box under stacking pressure. The boxes, as well as the bags, are planned for the convenience of users as well as for packaging efficiency—they serve for filing or storage of recorded belts.

Shipping protection for the company's Time Master recording and reproducing machines is successfully obtained with a pre-packing which starts with a wrap of heavy, hard-finished wax paper covering the entire machine. Over this wrap a guide-cut and -scored wrap of B-flute corrugated board is taped tightly in place. The pre-packed machine is then slipped into an outer shipping container of 275-lb.-test corrugated board, bottom stitched.

Packaging of Photographic Equipment—C. M. ELLIOTT, *Eastman Kodak Co.* Mr. Elliott described in some detail the great help the packaging engineer can expect to get from various departments in a firm if the proper cooperative relationship is set up. At Eastman Kodak, many departments—from the chemical laboratory and physical testing department to the traffic, sales and advertising departments—are enlisted in the packaging department's work. Suppliers' advice and help can also be invaluable, it was stressed.

Mr. Elliott said that his company's packaging has to sell as well as protect and he showed samples of some of the packages and counter display cartons that have been successful in getting the various units, such as camera accessories, out of the retailer's drawer and into view. Attractive, well-designed gift packages, he said, have had phenomenal success.

Mr. Elliott passed along the following lessons which Eastman Kodak's packaging engineers have learned: (1) The packaging engineer should have an adequate engineering sample for use in package design and shipping tests several months prior to production. (2) The packaging engineer must insist on being brought into close liaison with the product engineer at an early stage to keep out non-essential product features that may greatly complicate packaging later on. (3) Exhaustive shipping tests are a must for equipment makers. To risk shipment without such tests is folly, since the most experienced packaging man cannot predict results for a complex or fragile item. (4) Field trips, to examine packages at point of sale, are worth while. (5) Quality control has a natural place in a packaging program—whether limited to a policing action or statistical control. Packaging is just as deserving of inspection procedures as the production department.

On some specific points, Mr. Elliott said, the company was encouraged by results of using colored liners and two-color printing on corrugated cartons. He predicted more would be employed. He said corrugated board or cleated plywood is being successfully used to replace solid nailed wood boxes, and showed one corrugated carton costing 90 cents which had replaced a $2.60 wood crate—saving labor, freight and storage space as well as the $1.70 in cost.

Mere lack of damage complaints, rather than cause for self-congratulations, may be a sign of overpacking, Mr. Elliott pointed out, and it is up to the packaging engineer to uncover such savings.

Packaging of Cash Registers in Corrugated Cartons—M. W. BARNELL, *National Cash Register Co.* Since 1938, by progressive steps, National Cash Register Co. has adopted corrugated-carton packing for six types of cash registers and one small accounting machine. In 1950 this method was adopted for some sizes of the company's Class 6000 register, a type used almost universally in supermarkets. This is the largest machine as yet packed in a carton by the company; larger units are still being packed in solid wood boxes made in the company's complete box shop. Materials and labor costs for packing the Class 6000 machine in a carton total $2.65, Mr. Barnell said. An experienced packer easily averages 50 machines in eight hours. Gross weight is 212 lbs. The saving over wood amounts to $1.45 for labor and materials; weight reduction is 34 lbs. and transportation savings amount to about 66 cents a register. Damage claims are down slightly, although with wood boxes where "practically no cushioning is provided," according to Mr. Barnell, damage claims in domestic shipment have seldom exceeded ½ of 1% of dollar value.

Mr. Barnell said his company has a problem in packing registers because the metal cabinet of the machine has little structural strength; moreover, the cash drawer base does not permit use of base bolts or screws and the unit must be packed so as to hang suspended from its cash drawer base if turned upside

down. Corrugated tubes or sleeves provide this support in the cartons. Mr. Barnell showed a movie of the National Cash Register packing line illustrating the procedure, using cartons. A special feature of the line is a turntable device which enables one man to load a 200-lb. machine gently into its carton.

Packaging of Punched-Card Accounting Machines—R. D. COURTRIGHT, *International Business Machines Corp.* Mr. Courtright confined his comments to packaging of larger business machines weighing from several hundred up to several thousand pounds. The company's packaging for this equipment is in a state of transition from returnable wood crates to expendable packaging, with wirebound wood crates for units having a net weight up to 1,600 lbs., which is the heaviest unit the company has as yet tested in this type of container. Wirebound crates, Mr. Courtright pointed out, have not been considered for machines of extremely low production because of the comparatively high volume requirements necessary to make wirebounds economical.

The desire for a single-use rather than a re-use container stemmed in part from a desire to avoid bringing a machine into a customer's office in a container showing the scars of previous shipments. However, because the machines are rented rather than sold outright, field employees very often have to remove a customer's old machine after installing a new one; therefore the expendable container must be re-usable to the extent of serving as the shipping case for the old machine on its trip back to the factory for possible rebuilding or reconditioning. This requirement excluded several good corrugated, plywood and cleated container designs. The wirebounds (and the solid wood crates, where still used) can be opened and repacked with a ball-peen hammer, a screwdriver and a wrench.

PRODUCTION SEMINAR

Chairman, JOHN A. WARREN, *American Home Products Corp.*

Selecting and Training of Personnel—the Key to Cost Reduction—CLARENCE T. GENOVESE, *Vice President, Dunlap and Associates, Inc.* In the consumer-goods industry, packaging labor, while varying considerably, accounts for an average of 85 to 90% of all direct labor time, according to Dr. Genovese. The application of modern techniques to packaging-personnel problems can result and has already resulted in appreciable savings.

In a packaging operation the environment usually includes automatic or semi-automatic machines as well as other people. We must consider the man-machine and man-to-man relationships when viewing the personnel problems we wish to solve.

Fitting men and jobs can and should be a professional process. Are you hiring low-level employees solely on the basis of satisfactory health and a willingness to accept the pay offered? Matching people and jobs on the basis of the objective information available from aptitude testing can eliminate much of the guesswork in hiring and placing people in the factory. Psychological testing, in expert hands, can strike pay dirt for you by increasing productivity and employee morale, and by lowering employee turnover, training costs and accident rates. Tested personnel may also bring additional savings resulting from effective supervision and less material spoilage. Because most of the jobs are simple, it is often assumed that a minimum amount of observation is all that is needed for the individual to perform adequately.

Before installing or even purchasing new equipment, be sure that it is "human engineered." Make certain that newly designed equipment is not viewed in a labor vacuum but in relation to the operator who will run it and the mechanic who will keep it functioning properly, Dr. Genovese cautioned. Personnel departments should analyze each job to determine skills, abilities and characteristics needed for success.

Training of Packaging-Line Mechanics—E. W. LOVE, *Assistant Plant Manager, Bristol-Myers Co.* Most people feel that the selection of packaging-line mechanics is actually more important than the training itself, for this type of mechanic seems to be different from other craftsmen, Mr. Love stated.

Before standard aptitude tests were adopted by Bristol-Myers, they were tried out on personnel who had been rated by the company. The results correlated very well with the company's previous ratings. But aptitude test results are considered helpful—not necessarily conclusive.

The company's system of packaging-line maintenance involves an organization comprising 17 men, headed by an "A" foreman, 11 of whom are directly under a "B" foreman and are responsible for unit and floor work. Three of the men, under a "C" foreman, are the shop or service crew. The entire group concerns itself only with packaging-line maintenance and is entirely independent of the general plant maintenance group, but works directly under the supervision of the finishing department head. They keep some 120 machines in efficient operation. They also make all change-overs, all emergency and permanent repairs, install new machinery and relocate old machinery. The general plant maintenance group is called on to help extensively in the latter duty, although final testing and set-up is done by packaging-line men.

It requires careful selection of men to carry out these responsibilities even when the candidate starts at the "C" grade level. Sometimes qualified men can be hired outside; sometimes the candidate is a relative or friend of a packaging-line mechanic; but the effort is to locate men within the plant who possess the desired aptitudes. Occasionally they are found in men who clean up or supply the lines with materials.

The candidate starting at the bottom—"C" level—has the knack or aptitude. He should preferably have some knowledge of packaging materials and shop arithmetic and have had one or two years of mechanical maintenance work. The company provides financial help for his technical education in night or trade schools.

Bristol-Myers also conducts a machine-shop training course for line mechanics, run by the foreman of the packaging-line maintenance section.

A further and newer training program, for the shop or service crew, consists of a "C" foreman, a machinist and two packaging-line mechanics, the foreman being a working foreman as well as a top machinist.

Training of Packaging-Line Supervisors—E. J. CAPSTACK, *Packaging Engineer, Joseph E. Seagram & Sons, Inc.* Since a great deal of the production supervisor's time must be devoted to training his workers, he himself must be a teacher. The first requisite of a teacher is that he have a complete knowledge of the subject he is to teach. Therefore, before he can be an effective teacher, the supervisor must be taught.

The first step in setting up a supervisory training program is defining in detail the responsibilities that will enable the supervisor to organize, deputize and supervise his duties.

The next step is discussion of the specific duties of the prospective supervisor. Necessary time is allocated for learning each duty in the following manner: (1) tell him how to do it, (2) have him repeat how to do it, (3) show him how to do it, (4) let him do it, and (5) check on his progress in learning the operation.

Someone thoroughly familiar with the operation discusses completely all the variables and available operating experience applying to it.

When all operations have been learned, the trainee is next assigned to supervisory duties, with an experienced supervisor close at hand to teach him any special techniques that are required.

Good maintenance supervisors are made, not born. In the Seagram organization the selection of a trainee is usually the result of action taken by the maintenance superintendent, who

has recognized the need for a new supervisor, has looked over the men in his own department, and has either recommended one or conferred with the personnel department to help locate one with suitable qualifications.

The new trainee is given a tour of the department and a review of all the services. On completion of his tour, he is required to draw up an organization chart, show the names of the people he has met, describe their major responsibilities and tell how they are affected by the maintenance department.

As part of his training he is shown the various machines on the bottling line and is told their function. He must examine each machine closely, describe its operation, note specific manufacturer's data, number of motors and what they do. Then he must answer a series of questions about each machine and tell why it is on the line.

Up to this point the candidate has spent two days of his training period. He is now ready to begin the detailed study of each machine he covers.

The trainee is taught the mechanics of changing the machine from one size of package to another. He must know the change parts and their adjustment on the machine. He then works on the shift where the line changes are made and soon must be able to reconcile the production adjustments with his instructions. Finally he is introduced to office practices.

In about a month he has reached a stage of development where his training and experience qualify him to be assigned full responsibility for a shift—usually the shift on which line changes and repairs to machines are made. From here on he is in the full swing of operations and his future is now measured by his ability to get along with his crew while achieving the productive results expected of any supervisor.

SHIPPING CONTAINER SEMINAR

Chairman, ALLYN C. BEARDSELL, *Container Laboratories, Inc.*

Vacuum Sealing of Siftproof Seal-End Folding Cartons—WILLIAM J. CUPO, *Johnson & Johnson, Inc.* (Mr. Cupo's paper will be published in full in a future issue of MODERN PACKAGING.)

Evaluation of Cushioning Media for Interior Packing—JOHN L. GRETZ, *The Sponge Rubber Products Co.* (This paper was published, with diagrams, drawings and photographs, in MODERN PACKAGING under the title, "Engineering a Cushioned Package," April 1952, p. 129.)

New Closure Regulations in the Uniform Freight Classification—GEORGE J. KEYES, *Member, Official Classification Committee.* Mr. Keyes explained that his committee is an agency of the railroads stemming from the Congressional power to regulate interstate commerce, under which power the Interstate Commerce Commission was established. The function of the Classification Committees is primarily to establish ratings, rules and regulations under which railroad freight moves in interstate commerce. In this manner, the Committees act as judge and jury on devices and materials developed for packaging articles for freight shipment. He stressed that essentially the Committee originated few if any ideas concerning packaging material. It merely assessed, in an impartial manner, the ability of new packaging methods to stand up in use and when proved adequate authorized their use in rail transport packaging.

Generally, prior to World War II, Rule 41 fibre boxes were permitted only in limited sizes and for limited weights of contents. At that time sealing was regarded primarily as a means of preventing sifting and of retaining the contents. Since the war, however, corrugated fibre boxes have come into use for heavy manufactured articles (up to 50 lbs.) previously shipped in wood boxes. Mr. Keyes discussed the substitution of pressure-sensitive, filament-reinforced paper tapes for metal wire or strapping on such containers, and the Committee's findings with regard to various types of reinforcement. Reinforced-tape sealed and strapped cartons, as authorized by the Committee for specific manufactured items, have been in use for about a year, and are working very well, Mr. Keyes said. However, this use of reinforced tape is not as yet authorized for Rule 41 R.S.C. boxes in general.

Where paper sealing tape is authorized, which would include pressure-sensitive tape as well as the conventional gummed-paper tape, it must be 2 in. wide and must cover seams completely. A proposal for reduction of this specification to 1⅝ in., to cover only ⅝ of a seam's length where the tape is of pressure-sensitive type is under consideration, but there appears to be some ground for objecting to the 1⅝-in. width, which would leave only ⅜ in. on either side of a well-closed seam. If the seam edges were spread even slightly, the bearing for the tape might be insufficient, as shipping cases traveling by rail take quite a beating at times.

At the close of his talk, Mr. Keyes stressed the "open door" policy of the Official Classification Committee, which invites the questions and proposals of packaging people. He said that the design of boxes is viewed by the Committee as an evolutionary process which is still going on.

Glued Lap Joints on Fibre Containers—ALFRED W. HOFFMAN, *Container Laboratories, Inc.* Mr. Hoffman discussed the advantages and disadvantages of glued lap joints for the manufacturer's joint of corrugated fibreboard containers, stressing the fact that his comments were based on personal experience and on conversations with individuals concerned with the question. In the course of his investigations, he stated, the views of proponents of taped, stitched and glued joints had been solicited. His own opinion is that glued lap boxes will comprise an increasingly large percentage of box production in the years to come. In so far as the box user is concerned, he should make his choice of manufacturer's joint on the basis of his own particular packaging problems and select that method best suited to his needs.

Mr. Hoffman discussed the three major types of manufacturer's joint—stitched, taped and glued—pointing out that laboratory and field experience with glued lap joints has been relatively limited in comparison with experience for the other types of joint. With regard to certain laboratory tests, he said, it is difficult to evaluate properly the differences as between the various kinds of joints for the simple reason that other parts of the containers failed first. Where comparisons have been possible, the difference has not been great in either direction. Size, shape and loading of containers greatly influence performance by determining whether the manufacturer's joint will be subjected to severe forces.

Tuf-Edge and Tuf-Wall Corrugated Fibreboard Containers—ARTHUR MOSCOWITZ, *Shelton Manufacturing Co.* Mr. Moscowitz described his company's techniques for reinforcing corrugated containers. One method involves use of an additional layer of material, put in place during fabrication of the board, to serve as a built-in reinforcement at flap scores; this technique can also be used to provide an additional reinforcing band around the container which increases resistance to bulging. These reinforcements are inside the outer board surface and consequently do not show. Another reinforcement method for corrugated fibre containers which Mr. Moscowitz described involves application of an extra layer of double-wall reinforcement. This is added to the blank wherever it is found necessary. It may be inside or outside; it may be used to reinforce carton walls for extra compression strength, or it may be spotted for added cushioning at contact points, thereby eliminating the need for placing separate cushioning pieces during loading. The result is said to be increased container performance at minimum cost because of the strategic location of the extra material. The edge-rein-

forced cartons stack like any other cartons, Mr. Moscowitz said, but depending on the individual design, some cartons with specially reinforced walls may best be handled and stored as power-packed palletized loads until ready for use.

PACKAGING RESEARCH AND DEVELOPMENT

Chairman, CHARLES M. WOODCOCK, *General Foods Corp.*

Packaging Uses of Plastic-Coated Papers—L. F. SWEC, *H. P. Smith Paper Co.* The functional barrier properties of thermoplastics and the reinforcing-strength properties of paper combine to provide an important class of packaging materials, said Mr. Swec. The theoretical number of combinations is almost infinite. This discussion is limited to plastic-coated papers used only for functional packaging purposes, thus excluding purely decorative coatings. It is further limited to continuous coatings over ¼ mil in thickness of pure thermoplastics or compounds comprised primarily of a thermoplastic resin.

The most important plastic-coated paper in the packaging field today is polyethylene-coated paper. Polyethylene has a relatively low area coat, very good water and water-vapor resistance, chemical resistance, low temperature flexibility and heat sealability. It is very flexible from —75 deg. F. up to 200 deg. F. and it ages well because of its inertness and the fact that it is an uncompounded, pure plastic.

A large use of polyethylene-coated paper has been the manufacture of multiwall bags with a 1 to 2 mil coating on 50- to 60-lb. kraft as the inner ply of the bag. Waterproof multiwall bags have usually been made with an asphalt-laminated ply. These have the disadvantages of poor low-temperature flexibility and staining upon contact with greasy materials. The polyethylene-coated ply gives comparable moisture resistance and good durability without these disadvantages. In addition, a new use for multiwall bags with the polyethylene-coated inner ply has been found. This paper is appropriate for packaging solids which must not be contaminated with paper fibres, replacing drums or separate plastic liners for this purpose.

Polyethylene coatings of 1½ to 2 mils on 50- to 60-lb. kraft have been used to manufacture small, flat heat-sealed pouches or bags for packaging metal parts. A large volume of this coated paper has been sold to meet requirements of the military waterproof bag specification, JAN-P-117, Grade A, Class C. The same type of heat-sealed bag, with less rigid specification requirements, has been used in considerable quantity by industry and by the Quartermaster Corps for unit packages containing dry powdered materials.

Rigid paper containers such as fibreboard drums and tubes are also being made with polyethylene-coated paper as the inner liner. These are used for packaging dry chemicals of many types where moisture protection and cleanliness are important.

Polyethylene-coated paper is being successfully used as a wrapper for several types of products. A 1½-2 mil polyethylene coating on 40- to 60-lb. red kraft has been used in large quantities for wrapping metal parts, as a so-called "Ordnance wrap" meeting the requirements of the military greaseproof barrier specification, JAN-B-121, Grade A. Polyethylene-coated creped kraft is also being used as a waterproof case liner under the same specification, while the combination of aluminum foil, paper and polyethylene is receiving considerable interest for packaging very hygroscopic materials.

Vinyl chloride copolymers and vinylidene chloride copolymers (such as saran) comprise another important class of plastics being used to coat paper. These plastics are well known for their resistance to most greases, oils and hydrocarbons. They also have good resistance to common gases, such as oxygen and carbon dioxide. Saran is particularly outstanding in these properties as well as being exceptionally resistant to water and water-vapor.

One major end use is in vinyl-coated milk-carton board. Another large use for both vinyl- and saran-coated paper is as a cap liner for most liquids packaged in glass bottles and as a crown spot for many carbonated beverages in glass bottles.*

Proper Specifications for Blow-Molded Polyethylene Containers—J. H. PARLIMAN, *Plax Corp.* Polyethylene containers are so new that new and different specifications are not uncommon. These should be established as quickly as possible, Mr. Parliman said. A specification is a reflection of the needs of the buyer and the manufacturing restrictions of the supplier. If specifications are too exacting, the package costs rise because of rejections in the supplier's plant; if too vague, package quality will be reduced and rejection costs will rise.

Weight is one of the most important specifications to be established. Common weight variations are plus or minus 5%. Weight varies with size, design and length of production run. If weight requirement is too high, a spray dispenser may require too much force for the squeeze; the capacity of the container may be too small; or the cost may be higher than necessary. If weight is too low, a squeeze package may evidence too slow a recovery time; capacity may be greater than expected; and thin walls and corners can be encountered.

The color specification often used for natural-color bottles calls for pure polyethylene unadulterated by additives or plasticizers. For colored bottles the base resin can be specified in the same way. One advantage of polyethylene bottles is that relatively small quantities can be purchased in standard or special colors, the range of which is something like 1,500 hues in pastels or opaques, many of them to color matches.

Overflow capacity and allowable capacity tolerances should be agreed upon between buyer and supplier at the outset because it is much easier to measure overflow capacity of a polyethylene bottle than its capacity to some arbitrary line such as shoulder or base of neck.

Labeling and decorating may be done by hot stamping, silk screening, and offset printing, the latter two methods requiring pre-treatment of the bottle surface to assure adherence of inks. Where the purchaser subcontracts or does his own printing, the specifications should identify the method to be used, to insure proper bottle-surface treatment. Paper labeling also requires pre-treatment.

Closure fit on polyethylene containers requires conditions differing from glass, metal or any other type of container. The supplier must be advised in detail what closures are to be used.

Spray plugs or other dispensers require proper neck design, and full description of their dimensions and material must be given in the specifications unless the bottle supplier supplies the dispensers.**

Engineering the Adhesion Operation—FRANK C. CAMPINS, *President, Polymer Industries, Inc.* Dr. Campins gave a brief, animated talk in which he stressed what he called the root of all adhesion problems—the fact that all packages and other non-isolated surfaces are contaminated, so far as perfect adhesion is concerned. There are, he said, four kinds of contamination: (1) imposed dirt, (2) contact residues, (3) reaction residues and (4) mobility residues. There is need for a means of removing these contaminants—which he called "garbage"—with an adequate margin of safety. Dr. Campins urged the use of specifications to reduce contaminants to a tolerable level.

How to Predict Shelf Life from Packaging Laboratory Data—ROSS A. EASTER, *Pillsbury Mills, Inc.* (The complete text of Mr. Easter's paper will be presented as an illustrated article in a future issue of MODERN PACKAGING.)

* For a further discussion of the subject by the same author, see "Progress in Resin Coating," MODERN PACKAGING, Sept., 1952, p. 151.

** For further information, see "Design Factors in Blow-Molded Plastic Bottles," by Parliman, MODERN PACKAGING, Oct., 1951, p. 111, and Nov., 1951, p. 132; and "The Plastic Bottle," by Parliman and W. Ward Willett, 1953 *Modern Packaging Encyclopedia*, p. 370.

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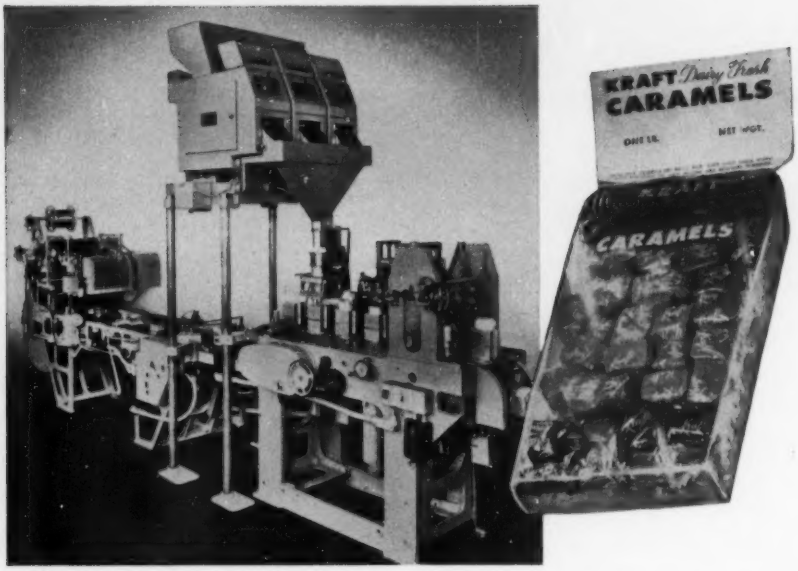

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Vacuum sealing of folding cartons*

METHOD OF EFFECTING SIFTPROOF SEAL BY CLOSING CARTONS UNDER A VACUUM, PRODUCING INSIDE PRESSURE ON FLAPS.

By William J. Cupo†

According to legend, the birth of the present-day folding carton was the result of a happy accident. In the year 1879 a printing press, set up to print some paper bags, printed too deeply and cut through the paper. From these cut bits of paper was born the method of cutting and creasing paperboard in one operation. Ingenuity and imagination had created the foundation for that workhorse of the packaging industry, the folding carton.

In the ensuing years the combined efforts of four of the great industries of the packaging field—paper-box manufacturing, printing, packaging machinery and adhesives—have resulted in the development of literally hundreds of types of folding cartons. Each has its own special characteristics and each is particularly suited to do its work. Probably the best known of the more common types of folding cartons, to laymen and packaging men alike, is the seal-end type of carton (see Fig. 1). Basically, this is a rectangular tube with flaps extending from both ends of each wall or panel.

The seal-end carton has numerous advantages which make it eminently suitable for packaging a host of products. Outstanding advantages are its ability to protect the product, its ability to sell the product, its ease of handling on high-speed equipment and, above all, its economy. Indeed, a seal-end carton can truthfully be called a marvel of engineering simplicity. It would seem, then, that the seal-end carton, for the purposes for which it is used, makes a pretty good approach to being a perfect package. Unhappily, like the heel of Achilles, the seal-end carton, especially when filled with a finely granulated or powdery product, also has a weakness.

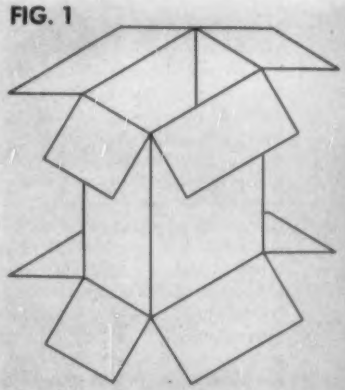
Under the present method of carton sealing it is relatively simple to make an excellent seal on the bottom of the carton, but it is extremely difficult to effect a solid top seal after the carton has been filled. Under these methods it is physically impossible to bring all the glued surfaces of the top flaps into firm and total contact; obviously, where there is no contact there will be no seal. In sealing two pieces of paper (or paperboard) together with an adhesive, it is elementary that firm pressure must be exerted not only on one side, but must be exerted on *both* sides *simultaneously*. If there is any doubt about this principle, lick a postage stamp and try to stick it to an envelope dangling from the end of a string.

This principle is extremely important in seal-end carton sealing and any violation of it only enhances the possibility of a sifting carton.

Conventional procedure

Let us consider briefly what happens when a carton is filled and sealed on the usual type of equipment. The empty carton is formed on a block or mandrel, adhesive is placed on the bottom flaps and the flaps are folded into place. The carton, still on the mandrel, is positioned over a metal plate; the mandrel and the metal plate are brought together in such a manner that tremendous pressure is exerted on all the bottom flaps (see Fig. 2). The net result is that the flaps are pressed firmly and completely together, the adhesive is spread evenly over all the surfaces and the adhesive also is driven between the fibres of the paperboard. For practical purposes, a

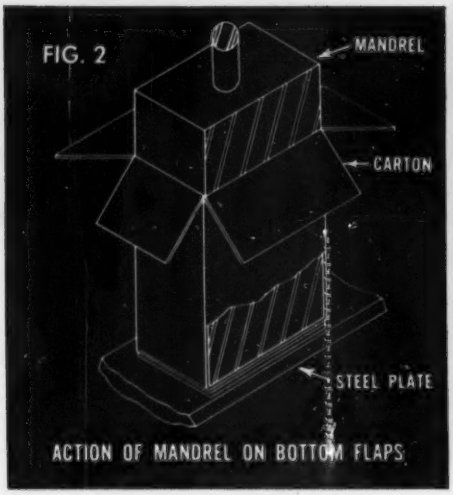
FIG. 1

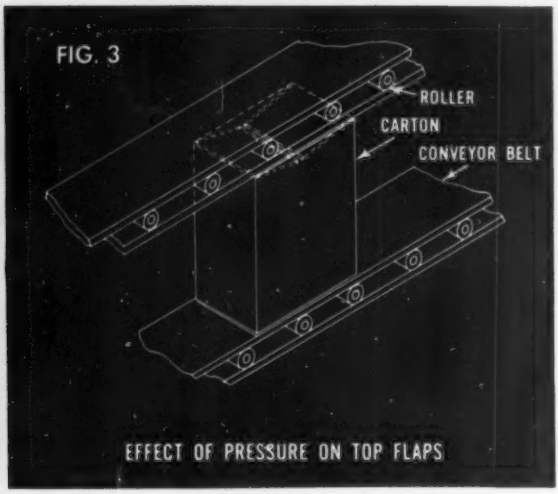


CONVENTIONAL SEAL-END CARTON

*From a paper delivered at the Annual Forum of the Packaging Institute, New York, October, 1952.

†Packaging Engineer, Johnson & Johnson, New Brunswick, N. J.





siftproof seal has thus been effected.

The carton is then removed from the block, placed on a conveyer and is carried to the filling equipment. After filling, the carton is conveyed through the top sealer. Here, as at the bottom sealer, adhesive is placed on the flaps and the flaps are folded into position. At this point all similarity to the bottom-sealing operation ceases, for there is a tremendous difference between what occurs at the bottom sealer and what takes place at the top sealer.

Granular products are usually placed in a carton so that a certain amount of slack or outage remains. This is the air space between the top of the product and the under side of the top flaps. Thus, when the top flaps are glued and positioned they find themselves without any support or pressure from the inside of the carton. The cardinal principle of carton sealing—the use of pressure on both sides of the flaps—is flagrantly violated. Pressure can be exerted on the outer surfaces only to hold the flaps in place and to effect whatever seal is possible. To receive this pressure the carton is placed between two lengthy conveyer belts. The amount of pressure that can be exerted on the carton is fairly critical: too much will crush the carton and too little will allow the flaps to separate. Generally speaking, the pressure is such that the carton can be removed from the belts by hand without difficulty.

Since all the top flaps are fairly flat prior to entering the top sealer, it would seem logical to conclude that a good seal would be effected merely by holding the flaps together until the adhesive had set and a strong, tacky bond had been made. Unfortunately, this is not the case. When the flaps, which are extensions of the front, back and side panels, are folded inwardly they form right angles to the panel from which they extend. When pressure is applied to the top of the closed carton it actually is being applied not to the full top surface of the carton, but mainly to the areas immediately surrounding the hinge points where the flaps join the panels. This is due to the fact that the flaps, being unsupported by anything inside the carton, must necessarily yield to the pressure. In yielding, the flaps can move in one direction only—downward into the interior of the carton. This downward movement is particularly evident with the innermost side-wall flaps, for they have no support whatever (see Fig. 3). When the flaps pivot downward in this manner they separate and do not form any contact throughout the greater part of the flap areas of the carton.

This unhealthy situation becomes even more aggravated when aqueous-base adhesives are used for carton sealing. Paper which has been moistened with water will curl with the grain of the paper; carton flaps coming into contact with a water adhesive develop a tendency to curl. The curling effect abets the separating action caused by the pressure on the flaps.

We therefore have the paradoxical situation wherein two of the main factors in carton sealing—pressure and adhesives—play the dual role of Dr. Jekyll and Mr. Hyde. On the one hand they attempt to seal the carton, yet on the other hand they do their utmost to prevent a seal. This situation is painfully evident from the number of defectively sealed cartons which can be found on the shelves of any store.

Importance of siftproofness

The foregoing is meant only to explain why the conditions of leakage and sifting exist in seal-end cartons as they are presently sealed. But it is not meant to imply, nor should it be inferred, that every carton is a "leaker." Actually, every well-made and properly handled seal-end carton is potentially siftproof and most cartons can be sealed tightly enough to prevent any loss of the product packaged therein.

Under present conditions of sealing, the percentage of leakers, as compared with non-leakers, is relatively small. However, while the number of leakers is small percentage-wise, numerically they can reach fantastic figures. I know of no available statistics on the number of sifting cartons produced annually, but for the purpose of discussion let us assume that the average percentage is as low as 1%. If so, a manufacturer producing 100,000,000 cartons an-

nually can expect 1,000,000 defectively sealed cartons.

By definition a siftproof carton is one which has been so sealed that the contents will not sift or leak out of it. The siftproof qualities of any carton, therefore, are purely relative; if any opening in the carton is smaller than any particle in the carton, then the product cannot escape and the carton may be termed siftproof.

With relation to siftproofness, the type of product contained in the carton is, of course, quite important. The manufacturer who packages kidney beans obviously has less of a sifting problem than the one who packages rice or barley. And the packagers of such products as salt, sugar or soap powders are even more concerned with sifting. To the packager of such products as flour, powdered desserts or cake mixes, the problem of sifting is so acute that products are rarely filled directly into the carton itself without the use of an inner bag or an outer wrapper. Sifting, then, is dependent upon product size and the smaller the product size the greater the possibility of sifting cartons.

A sifting or leaking carton poses problems beyond the mere loss of the product; obviously, if the product can get out, then outside matter such as dust, dirt and insects can get in. This may not be important where the product is not produced for human consumption, but it is a serious problem to the manufacturer of food products or any product which is supposed to reach the consumer in a sanitary condition.

Since 1879 innumerable efforts have been made to create a siftproof carton; most of these failed of their purpose principally because they were too complicated to be efficiently handled, required too much additional board or were otherwise impractical. Best of the more recent inventions is the principle of the Van Buren tabs or ears (see Fig. 4).

A new sealing principle

Now another principle of carton sealing has been developed. It has been pointed out that one of the main causes of sifting has been the inability of present sealing equipment or methods to exert pressure on both sides of the top flaps. In every instance, no matter what the method of sealing may be, the top-sealing operation is performed on a *completely closed carton*. The cause of sealing failure is *inside* the carton, beyond the reach of any existing mechanism. The problem then may be stated simply: How to exert pressure on the under side of the top flaps of a closed carton? The answer may be stated just as simply: By vacuum.

Every slack-filled carton contains a certain amount of air between the top of the product and the under side of the top flaps. If a vacuum can be created over the outer surface of the top of the carton, the air in the carton will attempt to fill that vacuum. Anything between the vacuum and the air in the carton will be subjected to a pressure equivalent to the differential in pressure between the vacuum and the air in the carton. Theoretically, it is possible to obtain a pressure of about 14.7 lbs. per sq. in. Commercially this is not feasible, but pressures of up to 10 lbs. per sq. in. are practical. If a vacuum pressure of 10 lbs./sq. in. is applied to a carton having a top surface area of 15 sq. in., it would mean that a total pressure of 150 lbs. is being exerted on the under side of the flap area.

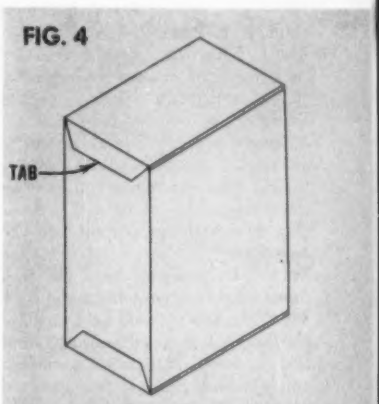
The use of vacuum is the only possible manner by which it becomes economically feasible to create the pressure necessary to seal the top flaps of a carton *while the carton is in a closed condition*.

In the vacuum-sealing method the conventional seal-end carton is used; the only difference is the use of small openings in the front and back flaps. The side-wall flaps are untouched and do not have any openings whatever (see Fig. 5). The openings in the front and back flaps are so positioned that when these flaps are folded, one over the other, the openings coincide. For purposes of registration, the openings in the inner long flap are slightly larger than those in the outer long flap. The openings are further positioned so that, when all the flaps are folded into place, the openings are located approximately over the center of the side-wall flaps.

These openings provide the passageway through which the vacuum can reach in and pick up the side-wall flaps.

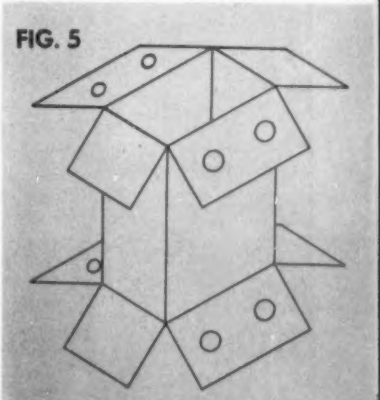
In the vacuum-sealing method, a filled carton ready to be top sealed passes through the conventional top sealer for the application of adhesive and the folding of the flaps. After this has been done the carton does not enter between the present conveyer belts, but passes under a vacuum chamber or suction head (see Fig. 6-A). The contact between the suction head and the top surface of the carton must be airtight so that when the vacuum is applied it can affect only the air in the carton. With the carton and suction head in firm contact, the vacuum is applied and, since nature abhors a vacuum, the air in the carton surges up to fill the void in the suction head. This upward rush of air strikes against the unsupported side-wall flaps and thrusts them against the front and back flaps. The side-wall flaps, being unperforated, act as valves when they are forced against the openings of the front and back flaps and effec-

FIG. 4

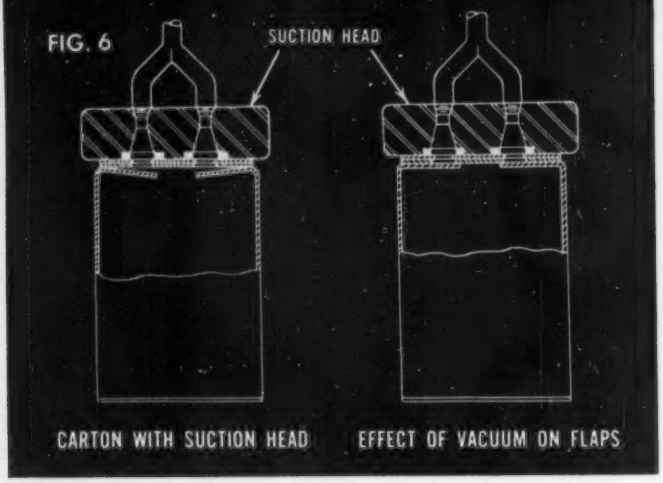


CARTON SHOWING VAN BUREN TABS

FIG. 5

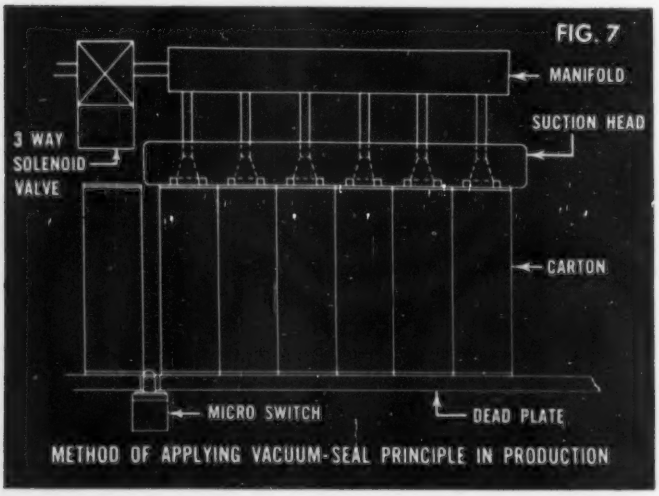


SEAL-END CARTON SHOWING OPENINGS ON BOTH ENDS OF CARTON



tively prevent the air in the carton from escaping into the suction head through the openings (see Fig. 6-B). The fact that the side-wall flaps shut off the flow of air does not mean that the air in the carton no longer wants to enter the suction head. On the contrary, the air is just as anxious to do so and demonstrates this anxiety by maintaining a strong and constant thrust against the flaps with a force that is directly proportional to the degree of vacuum in the suction head. The side-wall flaps are thus pressed firmly against front and back flaps. The latter, being held in place by the suction head, cannot move and therefore *all* the flaps are firmly and positively held in intimate contact throughout the entire flap area. It is possible then to emulate the action of the bottom sealer with the force of the vacuum being substituted for the force of the mandrel.

The dwell time of the vacuum should be long enough to cause the adhesive to form a preliminary bond firm enough to prevent any separation of the flaps. This is entirely dependent on the type of adhesive used; experiments have shown that with adhesives having a strong initial "tack" a dwell time of three to five seconds is sufficient. This does not mean that the flaps are sealed in that time; it must be remembered that the adhesive will remain in a plastic state until it forms the final bond. Until this final bond is formed, pressure must be maintained on the carton to prevent the natural "springiness" of the board from causing the outer flap to separate from the other flaps. This final pressure is obtained by passing the carton from the suction head to a conventional, but shortened, conveyer-belt system.



While the method of carton sealing by vacuum is not in actual production, hundreds of cartons of all sizes have been sealed by this method in the laboratory. Some of the cartons were hand-made samples, but usually they were unprinted cartons taken from commercial runs.

During the early stages of the experiments relatively coarse products such as soap powders, sugar and salt were used. However, such excellent results were obtained that it was decided to use a finer product such as flour. The results of the tests in which flour was used also were excellent; so much so, that for the past two years nothing but talcum powder has been used in the tests. The fineness of talcum powder places the vacuum-sealing method under a severe test, but the results have exceeded expectations. A few failures were encountered, but these were due principally to structural defects in the carton itself, such as glue seams which had been sealed on a bias.

These laboratory tests are considered to have proved that the principles of vacuum sealing are basically sound.

Application

The application of this method of sealing can be performed in a number of ways, such as:

1. By passing the carton from the top sealer to a rotary-type machine such as is used for liquid filling. A modified rotary bottle filler, stripped of its liquid filling system and with appropriate suction heads substituted for the filling nozzles is an excellent example.

This type of equipment would have the advantage of treating each carton individually and would provide the greatest amount of dwell time.

2. Another method would be the installation of a series of suction heads, in tandem, between the top sealer and a conventional but shortened conveyer belt. The number of suction heads would depend on the length of time needed to make the preliminary bond. While under the suction heads, the cartons would re-

(This article continued on page 203)

Antioxidant for waxes

DBPC APPEARS EFFECTIVE IN INHIBITING DETERIORATIVE CHANGES OF COATINGS ON PACKAGE MATERIALS.

By R. F. Seubert and E. D. Andrews*

One of the most important industrial uses for paraffin wax, microcrystalline wax or modified wax blends is in the coating field, especially by paper and container manufacturers as a coating material for the production of moistureproof wrappers and cartons. During application of the wax or blend to the paper stock it is customary to heat it to a temperature of the order of 160 to 200 deg. F.

Paraffin wax, when heated to such temperatures, tends to oxidize, the degree of oxidation depending upon such variables as metal catalysis, temperature, surface of exposure, time at elevated temperature and presence of oxygen. Oxidation of the finished coated product is accelerated by light, particularly sunlight. Some of the effects of oxidation observable in the resolidified wax are loss of hardness and tensile strength, discoloration and offensive odor. These properties are obviously undesirable from the standpoint of use of the wax as a paper- or carton-coating material, particularly where the paper or carton is to be used in packaging items like food products, rugs and cosmetics.

Deterioration of waxes and blends by oxidation can be prevented by the use of inhibitors. Some of the earlier inhibitors were unsatisfactory because they failed to meet some of the basic requirements, such as solubility, compatibility, efficiency in controlling development of objectionable odor, color or taste, effectiveness in preserving physical properties and price. In addition, freedom from acute and chronic toxic effects is essential. As a result of these stringent requirements, very few materials are satisfactory for use as wax inhibitors. Several commercially available antioxidants which have been approved for use with edible products have a number of undesirable properties as well as high price, which limits their wide use.

An antioxidant investigated in this laboratory which has demonstrated effectiveness for inhibiting petroleum wax and wax blends against oxidation is di-tertiary-butyl-para-cresol, DBPC.[1] This inhibitor did not impair the quality of the wax by imparting color, taste or odor, as established by a series of accelerated tests. The quantity of the inhibitor varied, depending upon the susceptibility of the wax; but in general, 0.01 to 0.05% by weight showed exceptional results. DBPC can be added while the wax is in the molten state, either as pure flakes or as a master batch in wax. The wax producer can benefit by the incorporation of an inhibitor in the manufacturing process to protect the wax against surface oxidation during storage and shipment.

The oxidation resistance of waxes and wax blends containing polyethylene was determined by a modification of the accelerated oxidation procedure of Morawetz (1).[2] This test involved bubbling one liter per hour of dry oxygen through a fritted glass dispersion tube submerged in a 100-gm. wax sample which had been sustained at 300 deg. F.

A typical test cell used for this work is shown in Fig. 1. The test was later modified by the addition of solid iron and copper catalysts. Copper and iron wire, each 3 ft. in length, No. 14 A.w.g., 0.064 in. in diameter providing a total surface area of 0.1448 sq. in. per gm. of the wax were prepared in the form of coils and immersed in the wax above the outlet

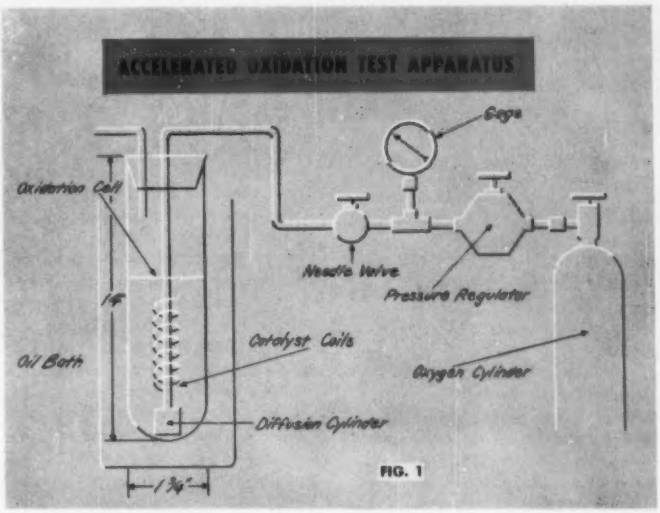
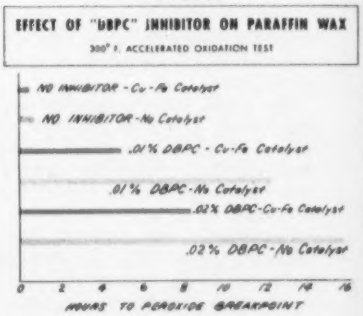


FIG. 1

FIG. 2



* Koppers Co., Inc., Chemical Division, Pittsburgh, Pa.

[1] DBPC is Koppers Co., Inc.'s, trademark for di-tertiary-butyl-para-cresol.

[2] Numbers in parentheses identify references appended.

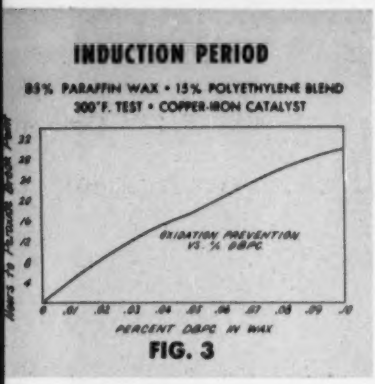

INDUCTION PERIOD
85% PARAFFIN WAX • 15% POLYETHYLENE BLEND
300°F. TEST • COPPER-IRON CATALYST
HOURS TO PEROXIDE BREAK POINT
OXIDATION PREVENTION VS. % DBPC
PERCENT DBPC IN WAX

FIG. 3

of the fritted glass bubbler. The performance of the DBPC inhibitor was also evaluated at 203 deg. F. The degree of wax oxidation was followed by peroxide number, color and odor determinations.

Fig. 2 charts the development of peroxides against hours of test at 300 deg. F. for a 124-126 deg. F. AMP paraffin wax, in the presence and absence of the solid iron-copper catalyst. Here the stability of the wax was increased tenfold by 0.01% DBPC. The same type of paraffin wax was blended with 15% of polythylene resin A, having a molecular weight of 7,000 and evaluated at 300 deg. F. in the presence of catalyst. The higher concentration of polyethylene was used to accentuate any adverse effects of the polymer on inhibitor function. A fourteenfold increase in stability was realized at 0.02% DBPC concentration, as illustrated in Fig. 3. In each case, the use of DBPC at higher levels caused greater inhibition.

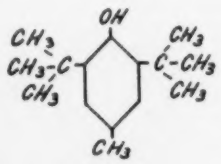
Samples of polythylene-modified waxes tested at 203 deg. F. demonstrated longer life than the same blends tested at 300 deg. F.; however, the relative inhibitor responses at the two temperatures were identical, which illustrates that the effectiveness of DBPC is maintained at lower temperatures.

The DBPC inhibitor demonstrated exceptionally good color protection in the waxes and blends tested. Color development in the inhibited samples was effectively retarded during the test period.

Organoleptic tests indicated that "off odor" was detectable just prior to the rapid development of peroxides in the region near the sharp bend in the curves. DBPC thus protected the wax or wax blend from poor odor to the same extent that peroxide formation was retarded.

Moureu and Dufraisse (2), early workers in this field, believed that antioxidants react with organic peroxides in a series of reactions in which the peroxides are decomposed and the antioxidant is regenerated. Later researchers such as Alyea and Backstrom (3) postulated that antioxidants interrupt oxidative chain reactions as peroxide reactors and are themselves oxidized in the process. Morawetz (1) in this investigation of phenolic compounds as antioxidants for paraffin wax presents evidence showing that the alkyl phenol antioxidants such as di-tertiary-butyl-para-cresol perform their function by reaction with organic peroxides leading to the formation of dimer peroxides. More recently Campbell and Coppinger (4) postulate the role of the antioxidant to be twofold. First, it may prevent initiation of an oxidative chain reaction by reaction with free radicals in the system; secondly, it functions by inactivating the organic peroxide after it is formed. Wasson and Smith (5) suggest that di-tertiary-butyl-para-cresol oxidizes predominantly to an aldehyde-type derivative which in itself has antioxidant properties.

DBPC is a hindered phenol in which the two tertiary-butyl groups mask the hydroxyl group so effectively that it does not manifest the physical and chemical activity typical of ordinary phenols. An expanded structural formula is shown in Fig. 4. Because of this chemical arrangement DBPC is not of toxic nature as are a number of other phenol derivatives. Considerable work has been carried out to study the toxicological properties of DBPC and tests are now in progress at the Albany Medical College to assist in securing approval of this inhibitor by the Food and Drug Administration. Sufficient information is available to indicate that DBPC has an extremely low order of acute toxicity for mice. From a practical standpoint, an antioxidant which possesses an LD_{50} (the quantity of the antioxidant which is fatal to 50% of the test animals following oral administration) of 1,000 mg./kg. or above has been stated by Food and Drug Administration representatives (6) to have met at least one important criterion of harmlessness. DBPC has met this requirement and according to Lehman (7) has successfully passed the initial stages of the toxicological investigation.



"DBPC"
di-tertiary-butyl-para-cresol

FIG. 4

Summary

Di-tertiary-butyl-para-cresol, a trialkylated phenol, has been shown to be an effective inhibitor for petroleum waxes. Waxes compounded by modifying agents such as polyethylene can also be effectively inhibited to retard deterioration of color and odor. DBPC meets all the basic requirements of a good inhibitor and its low order of toxicity suggests its application in all wax products, including those destined for food packaging.

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A smart closure, an easy-to-read label on Duraglas stock-mold bottle #A-6856 make your product the one they see . . . the one they buy.

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Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Test WVP of frozen-food packages

QUESTION: In connection with the development of a frozen-food package for one of our products, our laboratory has been looking at various reports on the water-vapor permeability for materials at zero deg. F. We have also done some work of our own in attempting to test the water-vapor permeability of different materials at zero deg. F. Our laboratory results show very little difference in various materials at this temperature. This is not in accordance with some of the results we have seen published. We would like some comment or help as to why our results do not show more differences in materials.

ANSWER: To measure accurately the water-vapor permeability of a packaging material at zero deg. F. is a difficult task which can only be performed with proper apparatus and skilled operators.

The vapor pressure of saturated air at zero deg. F. is about one millimeter of mercury as contrasted to a vapor pressure of about 45 millimeters for air at 100 deg. F. and 90% R.H. This means that there is more than a 40 times difference in the driving force across the specimen in the test cups. Also the reduction of temperature will increase the resistance of the material to penetration by water vapor. The net result is that WVTR at zero deg. F. may be as much as 100 times less than that for the same material at 100 deg. F. There are also many problems in connection with the maintenance of controlled humidity at zero deg. F., the methods of accurately weighing small differences in the test specimen and also of withdrawing cups at low-temperature atmosphere for weighing at room temperature. It is, therefore, a very easy matter for people unskilled in this type of testing to make errors which completely vitiate their results.

The Technical Assn. of the Pulp & Paper Industry, in cooperation with the Packaging Institute, is attempting to develop a standard procedure for this test and it is suggested that you write to either one of these organizations for details of their proposed method. Both experience and precise laboratory tests have shown there is a very large difference in the WVTR of materials at zero deg. F., just as there is at any other temperature, so the conclusion is that your laboratory methods are not sufficiently precise to detect such differences.

Packaging dry-milk products

QUESTION: We are interested in different materials that can be used to package a fat-free dry-milk powder. We are particularly interested in the use of laminated envelopes or small bags. Will you give us the benefit of your knowledge on this subject?

ANSWER: It is suggested that you read the article, "Dry Milk: Problem Child," which appeared in MODERN PACKAGING, July, 1951, p. 70. This article gives a complete review of the methods used for packaging dry-milk products, including the various types of materials and packaging methods used at that time by the different manufacturers who are packaging these products.

Developments in packaging of dry milk, however, have been moving along very rapidly and at present there appears to be a great deal of interest in the use of heat-sealed envelopes.

The smaller-sized envelopes are made of various combinations of laminated aluminum foil. A typical construction for such an envelope is 0.001 aluminum foil laminated to a 40-lb. bleached kraft paper, combined with a coating or film of a heat-sealing plastic on the paper side. Another combination of materials that might be used is an acetate film laminated to 0.001 aluminum foil, with a heat-seal coating applied on the foil. Both of these materials are printed on the foil surface and will make strongly sealed bags or envelopes for packaging dry-milk products.

It must be remembered that the smaller the size of the unit, the more moistureproof the materials that are used must be.

If larger-sized units are packed, bags can be made from laminated or lacquered glassine or other highly moistureproof paper-and-plastic combinations.

Film packaging for cheese slices

QUESTION: Would it be possible to use a polyethylene film for the packaging of cheeses in slices? We have seen cheese that appeared to be packaged in this way, but our own tests do not confirm these results. Can you advise us on this problem?

ANSWER: The sliced cheese which you have seen in food markets is not packaged in a polyethylene film. Polyethylene film transmits too much oxygen to be an effective barrier for the preservation of cheese through normal retail channels.

The film currently being used for packaging cheese in slices is a combination of polyethylene and cellophane laminated with special adhesives. The resulting combination is used with the polyethylene on the inside, serving as a moistureproof and heat-sealing coating, while the cellophane on the outside provides an oxygen barrier and a good surface for printing.

This type combination of materials has proved to be effective in the packaging of many products requiring protection against oxidation and moisture loss by a heat-sealable material offering transparency and printability as well.

"Sales tripled when we distinguished our bottles with Cel-O-Seal"

says Arthur Krantz, President, Hi-Grade Beverage Co., Buffalo, N.Y.

"When we decided to make our bottles real attention-getters," Mr. Krantz reports, "we hit on printed 'Cel-O-Seal' bands. In the short time we've been using these bands, sales of Club Soda have tripled and Ginger Ale sales have doubled. The credit belongs to 'Cel-O-Seal'!"

Here's why "CEL-O-SEAL" boosts sales

At the point of sale, bright Du Pont "Cel-O-Seal" bands add the touch of distinction that makes your package catch the eye . . . just when it really counts . . . at the moment of decision where 66% of all food-store purchases are decided.

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Use this FREE service

Here's the easy way to find out what "Cel-O-Seal" can do for *your* sales. Send us a labeled sample of your package, let our experts band it, make recommendations, return for your consideration. No charge! No obligation!

Address: E. I. du Pont de Nemours & Co. (Inc.) 9529-A Nemours Bldg., Wilmington 93, Delaware. "Cel-O-Seal" cellulose bands are also sold by Armstrong Cork Co., Lancaster, Pa., and by I. F. Schnier Co., San Francisco, Calif.

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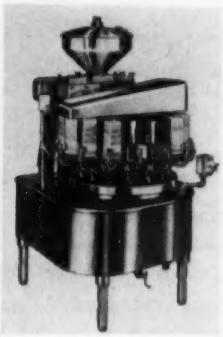
Equipment and materials

A NEW FILLER FOR PAPER MILK CONTAINERS

designed especially to meet the requirements of small and medium-sized dairies is also suitable for larger dairies for short-run production, where it does not pay to use and change over large filling equipment. This automatic milk filler, manufactured by the Triangle Package Machinery Co., Bagby Div., 6635 W. Diversey Ave., Chicago 35, Ill., is compact and is moderate in price. It opens, fills, code-dates and closes quarts, pints and half-pints with quick change-over at speeds of 20 containers per minute. Known as the Triangle-Bagby Model R-4, the machine utilizes a four-station filling feature, with each station filling a half-pint, thereby obtaining relatively high production without costly, messy foaming, according to the manufacturer. A newly patented rotary piston operation that pre-measures quantities to the exact ounce, the maker reports, guarantees absolute accuracy of fill. Should an empty carton not be beneath the filling nozzle or should the carton not be completely open, automatic controls prevent waste and spillage. Other features include a defoamer system, automatic dater, hopper-float valve and hopper drain. Variable speed drive gives a range of eight to 24 cartons per minute.

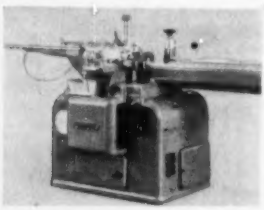


A FOOD TRAY THAT IS PURE WHITE ON BOTH SIDES

has prompted a change in the manufacturing specifications of Marathon's Kant-Leek food tray, according to the company. This new double-bleach-lined tray is calculated to add to the appetizing appearance of the food product. A new hard sizing now used in the liner is reported to maintain firmness of the tray in use. The same double-bleach-lined board is also being used for Marathon's wire-handle food-shop pails.

A WRAPPING MACHINE FOR CUBED SUGAR

either individually or in multiples of two, three or four, in printed or plain protective paper or cellulose film, is being offered by Sapal, Avenue Dapples 54, Lausanne, Switzerland. Completely enclosed in a one-piece housing, no product dust, said to be abrasive, can penetrate the mechanism. The spindles which pass through the housing telescope and the principal moving parts run in an oil bath; thus the main parts while protected are easily accessible and maintenance cut down to a minimum.

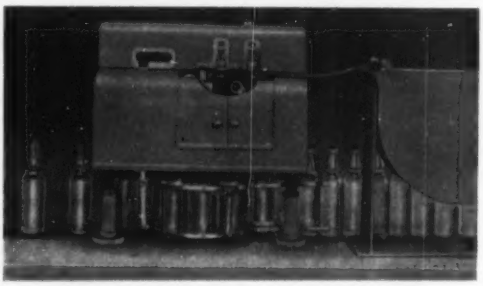


The folds in the wrapping material are made on the under side of the cube, rather than on the narrow side, as is customary with American-built sugar-wrapping machines. The company, builders of wrapping machines for the confectionery and candy industry for some 50 years, asserts that this type of wrap offers better protection for the product, since the fold is glued. To assure proper closure of the wrap, the packets pass on to an electrical drying device. The machine, known as Type BN-f, may be equipped for applying easy-opening tape and yet maintain its normal speed of about 150 packets per minute, depending on the number of cubes to be wrapped in each packet.

For use in Europe, where block sugar is generally molded in bars and is then cut into cube form before wrapping, the company has a special cutting device. This is independent of the wrapping machine but may be coupled with it and the speeds of the two operations synchronized.

NEW AUTOMATIC CELLULOSE BANDING MACHINES

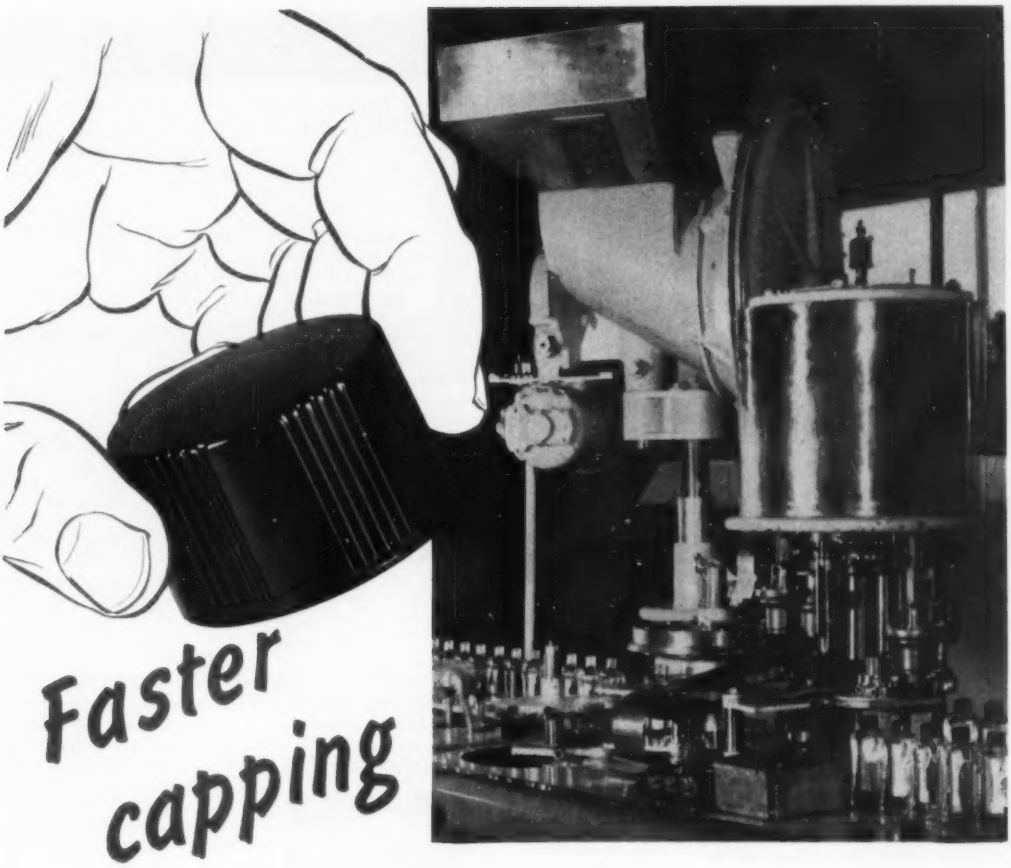
that reportedly deliver uniformly and precisely banded bottles have been announced by Economic Machinery Co., Worcester, Mass., a division of the Geo. J. Meyer Mfg. Co., makers of "World" labelers. The new automatic bander is designed to replace hand labor and overcome production problems. It applies plain bands and printed bands that do not require accurate register in relation to the printing. Any size or shape of bottle up to 3¾ in. in diameter can be banded automatically—the band diameter, for purposes of continuous production, remaining fixed, although its length is variable within ordinary commercial limits. In operation, the cellulose banding material, in roll form, is fed into position over the bottle before being cut. The bottle is indexed to receive the band by a star-wheel feed.



The band is opened by combined mechanical and vacuum action before accurate positioning of the cut band over the bottle. The band is then stripped off a plunger onto the bottle neck and cap. Simple attachments permit quick change-over to various sizes of bands and bottles. The only operating attention required by the unit, says the manufacturer, is renewal of the roll of banding material; thus, operation of other machines on the bottling line by the same operator is possible. The company reports that "World" banding machines adapted to handle all ranges of band diameters, printed bands of all types and bottle spotting will shortly be in production.

A NEW LINE OF FLEXIBLE, LAMINATED PAPERS

reported to have an extremely high standard of uniformity achieved by making the papers flexible *after* lamination has been announced by the Cromwell Paper Co., Chicago 32, Ill. Those currently in the line are: Flex-Fibre, in which acid-mold and wickproof glass fibres are swirled into the waterproof laminant and the sheet then made flexible; Flex-Lam, similar to Flex-Fibre, but without the glass fibre reinforcement; Fibre-Kraft, a sheet reinforced by the same type of fibres used in Flex-Fibre



Faster capping

NEW CAP DESIGN TAKES HIGHER LINE SPEEDS

Here's a cap that will give you greater line speeds—if cap breakage is now limiting your output.

Armstrong's Hi-Tork Caps can take the torque and impact of high-speed equipment because extra plastic has been added at points of greatest stress. The dome-to-skirt ratio, too, has been modified.

Hi-Tork Caps' newly designed thread contours increase the contact area for a better seal with less strain on the cap. And the recessed design leaves no projections to chip or cause cap breakage.

You'll be amazed at the punishment this cap can take without breaking. This means fewer rejects and less downtime.

But try them on your own lines. We'll gladly help you arrange for a test run. Just call your near-by Armstrong office or write Armstrong Cork Co., Glass and Closure Division, 5912 Prince Street, Lancaster, Pennsylvania.

ARMSTRONG'S *"HI-TORK"* CAPS

Molded for extra production on high-speed machines

are your customers getting these advantages of a **Lined Carton?**

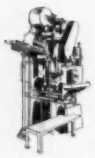
If you're interested in customer satisfaction, you'll be interested in protecting your product from moisture, dust, air or corrosion. That means you should consider a *lined* package for your product.

Initial business and repeat business is at stake — because you know that user experience with your product is extremely important in selling more of it.

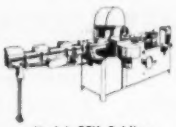
Peters Way Provides Answer

With the Peters Way of Packaging . . .using top-opening, *lined* cartons . . .you give your customers what they want in product protection. Peter Packaging machinery automatically forms, lines, folds and closes your cartons. . .speedily and efficiently. . .with the liner completely enclosing the carton contents.

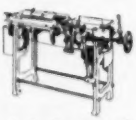
Your products deserve this kind of protection. You get it *completely* when you package the Peters Way. Investigate *soon.*



Senior Forming and Lining Machine



Model CCY Folding & Closing Machine



Junior Forming and Lining Machine

Write for your free copy of helpful booklet, "How to Make Cartons Easier to Open and Close . . . and Gain Advantages of LINED Cartons."

Peters

MACHINERY COMPANY

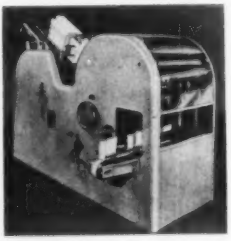
4712 Ravenswood Ave.
Chicago 40, Illinois

Equipment and materials

but without being made flexible; Ferro-Pak, a volatile corrosion-inhibitor paper in which invisible gases emanating from the paper protect ferrous metal parts from corrosion even when not in actual contact with the inhibitor.

A NEW CARTON-FORMING AND LINING MACHINE

claimed to be the fastest packaging equipment for lard and shortening packagers has been introduced by the Peters Machinery Co., 4700 Ravenswood Ave., Chicago 40, Ill. This fully automatic Model SE machine, reported capable of speeds to 150 and more cartons per minute, is adjustable on location to handle 1-lb. to 4-lb. cartons. It is new in engineering design, operating principle and in appearance. Features include simplified, easy-to-reach carton and liner-paper loading, with a conveyor line 22 in. above the floor. Cartons and liners are folded while moving up, rather than down, which facilitates handling and produces a better package, according to the manufacturer. The carton lock is positive and secure, with rotary tuckers and stationary carton tongue-lifting fingers.



FIBREBOARD CARTONS WITH TEAR-STRIP OPENINGS

recently announced by the Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul 6, Minn., bring to shipping cartons a new convenience feature. By simply pulling the tab, the top of the carton comes off neatly and without damage. The 3M company does not make the cartons; they are created by regular carton manufacturers with "Scotch" brand filament tape and a new, fully automatic machine that applies tape to fibreboard blanks at a rate reportedly faster than one per second. The machine and specially cut and wound tape are not expected to be available for widespread use before the second quarter of next year. The new tear-strip method permits a narrow strip of tape to cut cleanly through a carton's heavy sides. The tear strips have been tested successfully on cartons with bursting strengths up to 350 lbs., according to 3M. The tape, which is laminated inside the carton, is reported to add strength without increasing weight or affecting the carton's appearance. A small tab projecting from under the box manufacturer's joint is all that is visible outside the box. Advantages claimed include easier accessibility of carton contents; elimination of damage to contents from opening tools, which are unnecessary; less chance of injury to handlers; neatly opened cartons that lend themselves to use as floor displays.

TWO NEW HUMIDITY INDICATOR CARDS

are announced by the Culligan Zeolite Co., Northbrook, Ill. They both have the approval of the Air Force and Army Signal Corps for Method II packaging as provided by MIL-P-116A. The new cards do not need to be sealed in moistureproof containers, as their indicating color returns in about 15 minutes, according to the company. They are permanently calibrated with 5% accuracy unless wetted with water. One of the new cards—52-B 22849—has three sensitized spots indicating the humidities of 30%, 40% and 65% and is offered in place of the

Only Steigerwald

EMBOSSED FOIL SEALS

add so much to your product for so very little

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on

Steigerwald Embossed Foil Seals

A. M. Steigerwald Co.
910 W. VAN BUREN ST.
CHICAGO, ILLINOIS

Creators and Producers of all types of fine labels

Labelsmiths

Our company name is_____

Our product name is_____

Other label copy is_____

☐ Without obligation we want you to design a New Foil Label and give us a price on the following quantities_____

☐ We now use foil labels like the sample attached. Please quote prices on the following quantities

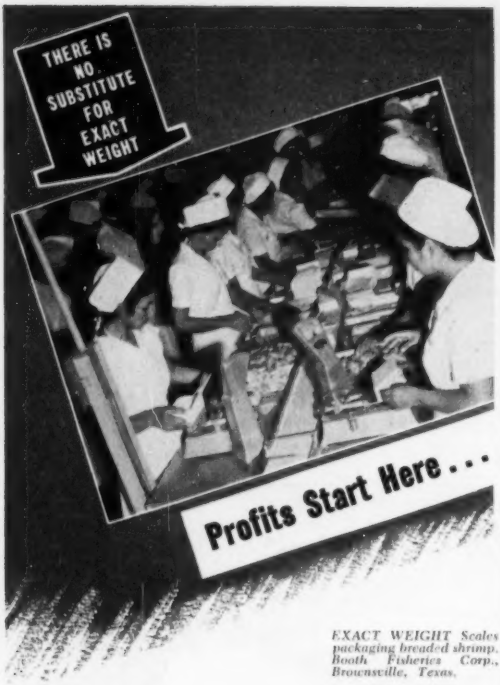
_____ _____ _____

ATTACH YOUR PRESENT LABEL TO THIS FORM

Mark reply for: Mr._____

CHARLOTTE, MICH.
L. M. Clark
612 So. Pleasant St.

CLEVELAND	DANVILLE, ILL.	LOUISVILLE	MEMPHIS	MINNEAPOLIS	NEW YORK, N. Y.	OAKLAND	ST. LOUIS
A. C. and J. S. Foster 310 Hippodrome Bldg. Cherry 1-2668	F. F. Michenfelder 1208 Sheridan St. DAnville 44421	Joe Herrmann 416 Jefferson St. WAlnut 1268	Edward Magnus 278 S. Front St. MEmphis 8-3474	J. E. and J. L. Moor 3329 DuPont Ave., So. Lowell 5808	John H. McLaren 646 W. 125th St. MOnument 2-0237	Jean S. Fenton 500 Sixteenth St. TWinoaks 2-1746	Marvin Yates Company Arcade Building GArfield 0741



EXACT WEIGHT Scales packaging breaded shrimp. Booth Fisheries Corp., Brownsville, Texas.

Sales & Service from Coast to Coast

When products go into consumer packages the all important question is how much is actually in the package . . . each package. Why handicap an otherwise efficient business from the very start. Remember profits start at the packaging operation. The best cost control measure is sound check-weighing whether the task is manually done, semi-automatic or fully automatic. High speed EXACT WEIGHT Scales are the answer. Wherever consumer packaging is done you will find these famous weighing units for more EXACT WEIGHT Scales are in use today in packaging operations like the above than any other scales of their type in the world. They are the leaders in the field. Write for details for your particular packaging operation.

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

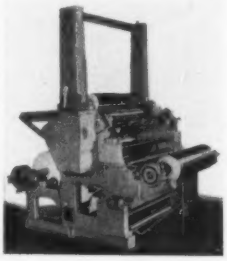
THE EXACT WEIGHT SCALE COMPANY
914 W. Fifth Ave., Columbus 8, Ohio
2920 Bloor St., West, Toronto 18, Canada

Equipment and materials

former AN-7513 indicator. The other card—52-B 22850—costs about 3 cents in volume and has but one spot indicating 40% relative humidity. This takes the place of the 25-cent AN-7511 indicator card. The old cards have not been cancelled, but the new humidity indicators are offered as alternates. The Air Force Materials Laboratory Research Division at Wright Field developed the new cards and Air Force Drawings 52-B 22849 and 52-B 22850 have been issued as the specifications.

A NEW GLUE-HOT-MELT FOIL-MOUNTING MACHINE

which promises new production economy—particularly in the production of small-diameter rolls of unprinted wrapping material—has been announced by the Inta-Roto Machine Co., Byrd Airport, Richmond, Va. Known as the Inta-Roto Foil Mounter, Type GHM, the new machine operates at speeds of from 400 to 1,000 ft. per min. It is simple and compact, not much larger than a good-sized office desk. There is no drying tunnel and all vital controls are within reach of the operator. With two machines going, one operator to each, output can keep a third man busy taking material off the line. The unit is recommended for high-speed finished rolls of material in the automatic machine wrapping of chewing gum, cigarettes, etc., and could be used by manufacturers of foil-laminated pie plates, trays or frozen-food containers. It may be equipped for high-speed glue-line laminating and for wax laminating. The machine comes complete, with two unwind and rewind shafts, two doctor blade holders, yardage indicator, gas drying unit, tank and pump for circulating glue.



A NEW WELDED-SEAL PROCESS

for polyethylene bags and liners incorporating a "built-in" seal that reportedly exceeds the side-wall strength has been announced by the Plastic Packaging Co., 740 N. Franklin St., Chicago 10, Ill. This improved method is said to provide a strong container with a seal that is watertight and airtight, for greatly extended application. Formed with the new welded-seal closure, the containers are recommended as liners for bags of paper or other material, paperboard or corrugated cartons, and fibre, metal or wooden drums and barrels. They make complete packages for a variety of products ranging from food products to precision metal parts. The containers are said to be mass produced at low unit cost on special company-owned patented machines.

A NEW OPAQUE ACETATE WRAP

offered by the Printon Corp., 310 E. 23rd St., New York 10, N. Y., is processed by the application of a new opaque coating which can be used on any weight of film, according to the manufacturer. Complete opacity is assured by a specially formulated black ink smoothly laid on the surface and which is not subject

to crumpling, cracking or peeling. It is reported that designs, labels, instructions can be printed on the processed film. In packaging, the new film blocks out damaging light rays and is suggested for such products as photographic film, light-sensitive wire and many other materials subject to fading in direct sun.

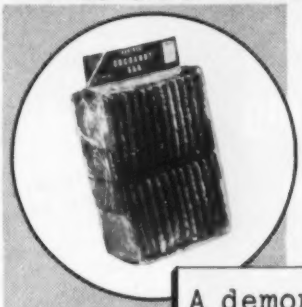
TWO NEW STOCK HALF-GALLON WINE BOTTLES have recently been added to the line manufactured by the Owens-Illinois Glass Co., Toledo, Ohio. One has blown-in decorations and double handles (at left in illustration) and represents a distinct departure from the usual plain round bottle. Its shape permits labeling on either side and it is offered in three finishes. The bulk-neck round bottle was developed as a result of the trend toward decanter-style wine bottles, which permit easy handling and pouring. Both bottles were designed to have the merchandising and re-use appeal being featured by the major wineries in their larger gift-application packages.

A NEW SPACE-SAVING BACON-WRAPPING MACHINE has been developed by the Schooler Mfg. Co., 101 W. Magnolia St., Burbank, Calif. It was originally designed for the overwrapping of bacon and similar products, to be installed over present packing belts or tables—thus requiring no floor space and little if any rearrangement of equipment or personnel. It is reported to do a job of wrapping second to none with either plain or printed cellophane, plain or flap board. One or several

brands or grades of product may be wrapped at the same time providing board length is uniform, and the unit takes either ½-lb. or 1-lb. sizes at speeds variable between 35 and 70 packages per minute. Grades which are not to be wrapped continue on the belt under the machine to the final packer for bulk packaging. Packers on the belt make the initial wrap of cellophane, pre-cut to size, around the package and deposit it into the infeed conveyor of the unit. This operation need not be precise, the manufacturer says, as the machine has a tendency to pull the overwrap tightly about the package before sealing. The unit is adjustable from 8½ to 11 in., with an over-all length of 11 ft. 6 in. and a maximum width of 27 in. Installation requires only a 115-V. supply line.

STANDARD PRESSES FOR BOTH WET AND DRY OFFSET are now being manufactured by American Type Founders, Elizabeth, N. J., after a great deal of experimentation in collaboration with various suppliers, research groups and interested customers. Basic changes in the new Chief Offset printing presses, 17 by 22 in. and 22 by 29 in., include a new plate cylinder which is undercut 0.030 to allow for the greater thickness of the dry offset plate. When wet offset plates are used, the plate cylinder is merely packed to accommodate the thinner planographic plate. Because greater precision is necessary with the dry offset process, plate rollers are dynamically and statically balanced. They are also equipped with capped roller-bearing sockets for greater precision control. These ink form rollers are

Labels on Bags



Popular Nabisco Cocoanut Bars are labelled and sealed automatically, in one operation, on Mercury Vacumatics *exclusively*.

A demonstration

on your own bagging line

will sell you on the

Mercury Vacumatic

automatic labeller

& sealer

The uninterruped free-from-downtime performance of the new Mercury Vacumatic Labeller and Sealer is so far superior to anything you have ever witnessed that all we ask is an opportunity to bring a machine into your plant, at your convenience, for half a day.

There is no obligation. We are certain a demonstration will convince you that there has never been a machine to equal this one for consistently accurate, foolproof, high speed labelling and sealing of bags. It feeds, positions, folds and seals *automatically*, folding the labels exactly in half or with long and short segments, as required.

The Mercury Vacumatic is the only labeller-sealer having a vacuum label feed with a genuine vacuum pump, operating through a timed control valve. This simple mechanism is patterned after the tested system used in all printing presses.

Arrange for a demonstration. **Let us show you how to make labelling difficulties a thing of the past. Write today for a demonstration of this superior machine in your own plant, on your production line.**

MERCURY HEAT SEALING EQUIPMENT

MERCURY
HEAT SEALING EQUIPMENT COMPANY
331 North 11th St., Philadelphia 7, Pa.

Phin Sales Co., 18 Eaton Ave., Toronto, Canada
Paul L. Karstrom Co., 1822 W. 74th St., Chicago 36, Ill.
King Sales & Eng. Co., 441 Folsom St., San Francisco 5, Calif.

Another Packaging Problem Solved by METAL EDGE

A CASE HISTORY:

PROBLEM:
How could an automotive wire and cable manufacturer make his products stand out on dealers' shelves . . . with no product advantage in the highly-competitive automobile after-market?

SOLUTION:
Distinctive, attractive and durable Metal Edge packaging was adopted . . . with a special dispensing slot to eliminate cable tangling and waste.

RESULT:
"These distinctive packages have an extra display advertising value that helps make sales . . . our salesmen and distributors are delighted."*
*President

METAL EDGE—the engineered method—has solved diverse packaging problems in more than 100 American industries.

METAL EDGE

NATIONAL METAL EDGE BOX CO.

PACKAGING • MATERIALS HANDLING • INVENTORY CONTROL

334 North 12th Street, Philadelphia 7, Penna.

Thousands of products are packaged in our

Transparent Plastic Boxes!

"Sit on top of the world" as you improve your packaging with boxes from the WORLD'S LARGEST SOURCE for TRANSPARENT PLASTIC BOXES. 1001 different rigid Polystyrene boxes from 50 molders . . . in stock, **no mold costs**, all sizes, shapes, styles . . . or we will design one to meet your need.

Send us a sample of the product you desire to package. We will recommend the best box without obligation.

Write for illustrated catalog TODAY!

300
7¼" x 3⅛" x 1⅛"
Hinged

512
10¾" x 6⅛" x 2"
12 compartments

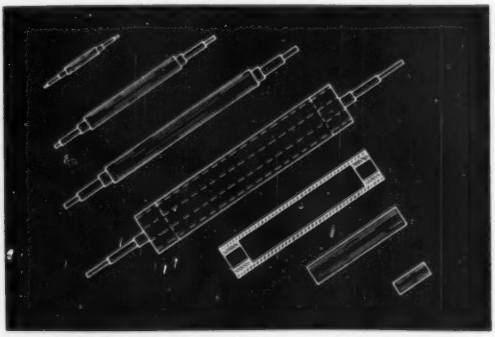
50
1" x 1" x ¾"
Hinged

36
2¼" x 1⅞" x 1¼"

BRADLEY INDUSTRIES
1652 N. Damen Ave., Chicago 47, Ill.
Tel: ARmitage 6-8198

PRINTING CYLINDERS

- 54" circumference x 60" face steel printing cylinders
- Permanent mandrels inserted or bored to fit your mandrel
- Steel rolls in all sizes
  from 14" circumference x 12" face
  to 74" circumference x 90" face
- These rolls have smooth polished surfaces, ready for copper plating



LEMBO MACHINE WORKS, INC.

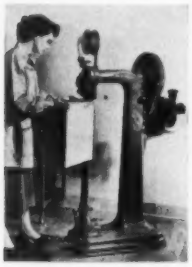
248 East 17th Street — Paterson, New Jersey

Manufacturers of Packaging Printing Machines
1 to 4 colors — up to 80" wide
for printing paper, vinyl film, polyethylene, textiles, etc.
Complete specifications and prices on request

no longer interchangeable with those used on former models of the Chiefs, although other rollers are. Plate cylinders are made so that the leading edge and the trailing edge of the plate enter the gap with a less abrupt bend. This permits the ink rollers to contact the plate without bumping, which results in longer roller wear. Several of the new combination presses have already been installed in various parts of the country.

A NEW MOBILE CARTON-STITCHING MACHINE

powered by a gasoline engine is reported to enable economical wire-stitching operations right in the field—warehouses, docks, yards, loading platforms, etc. The unit, offered by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill., can be mounted on trucks, pushcarts, dollies or any type of power-truck equipment. Where electricity cannot be supplied conveniently, the new Acme Steel Silverstitcher may be supplied with a 1-hp Briggs & Stratton four-cycle gasoline engine. It is reported especially useful for the field packaging of fruits and vegetables. The engine is started with a pull rope; a simple grounding mechanism stops it. Idler control permits varying stitching speeds from 150 to 345 per minute and eliminates the need for a variable speed pulley. Fuel cost is said to average 10 cents per day.



KRAFT BAGS PRINTED WITH CUT-OUT MASKS

introduced by the Gaylord Container Corp.'s Bag and Paper Division, 111 N. 4th St., St. Louis 2, Mo., are expected to make a big hit with children. This new line of No. 16 and No. 20 self-opening "Mask On Bags" are printed with three designs of cut-out masks—a rocket cadet with plastic helmet, a fierce tiger and a witch. They serve as a free premium for grocers. Space is provided within the design for the grocer's name. These copyrighted designs may be ordered through Gaylord Container's merchants.

A NEW PROCESS FOR PRINTING CORRUGATED BOXES

with colored patterns and pictures, introduced by the Stone Container Corp., 4200 W. 42nd Place, Chicago 32, Ill., and called Multi-Tone, is reported to reproduce, at competitive cost, photographs, wash drawings and the like, while retaining their full tonal values. Corrugated shipping containers printed by the new process increase the advertising effectiveness of boxes, speed recognition of the products so packaged and add more sales appeal than conventional illustrations, according to the supplier.

WATER-RESISTANT CASE-LINER ADHESIVES

reported to have fast initial tack, retack and long "open time" were announced by Paisley Products, Inc., 1770 Canalport Ave., Chicago 16, Ill. These adhesives are for use on seams and closures of waterproof paper bags, wraps and case liners to meet the requirements of military specification MIL-A-140A (which supersedes JAN-P-140), as well as on domestic and export packaging of non-military goods. The adhesives may be applied by machine or by hand brushing. The manufacturer

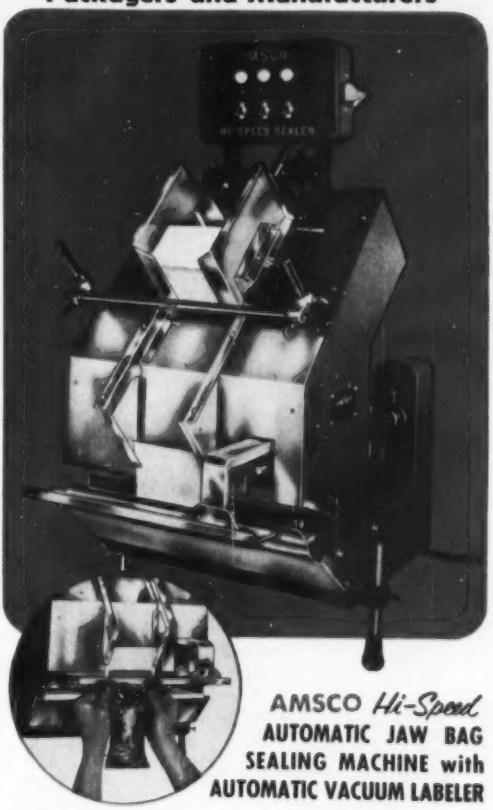
Making a quality product is *your* business!

Packaging is economically is our business!

that is why

AMSCO Packaging Equipment

is used by America's largest Packagers and Manufacturers



AMSCO *Hi-Speed* AUTOMATIC JAW BAG SEALING MACHINE with AUTOMATIC VACUUM LABELER

Tops of filled bags are automatically folded, labeled and sealed . . . *in one operation.* Quick changeover for different face-widths labels (rectangular and die-cut) in the standard range from 3 to 7 inches. For complete details on this and other AMSCO packaging equipment, write Dept. MP-12.

AMSCO

PACKAGING MACHINERY, INC.

31-31 48th Avenue Long Island City 1, N. Y.

Specialists in Diversified Packaging Equipment.

EVERYBODY KNOWS THEIR NAME

but

. . . Kreisler uses strong point-of-purchase reminders to create that decisive buying impulse.

This whirling bull's-eye carries out the design of this new band specially styled to be worn with round watches.

It is proving to be one of the most successful displays they've ever used. The whole idea was conceived, planned and executed by Consolidated—delivered right on schedule, well within the budget allocated by Kreisler.

New products always do better with displays . . .

Main Office and Plant at Carle Place, L. I., N. Y.

Sales Offices in Philadelphia, Chicago, Louisville and Tampa.

Sales Engineered by
CONSOLIDATED
Lithographing Corporation
MEMBER OF THE POINT OF PURCHASE ADVERTISING INSTITUTE

Equipment and materials

reports that tests indicate the adhesive has fungus resistance, low-temperature flexibility at zero deg. F., and minimum resistance to water penetration of 8 hrs. It can be applied to both surfaces in seaming operations and allowed to air dry, then combined to form a permanent bond.

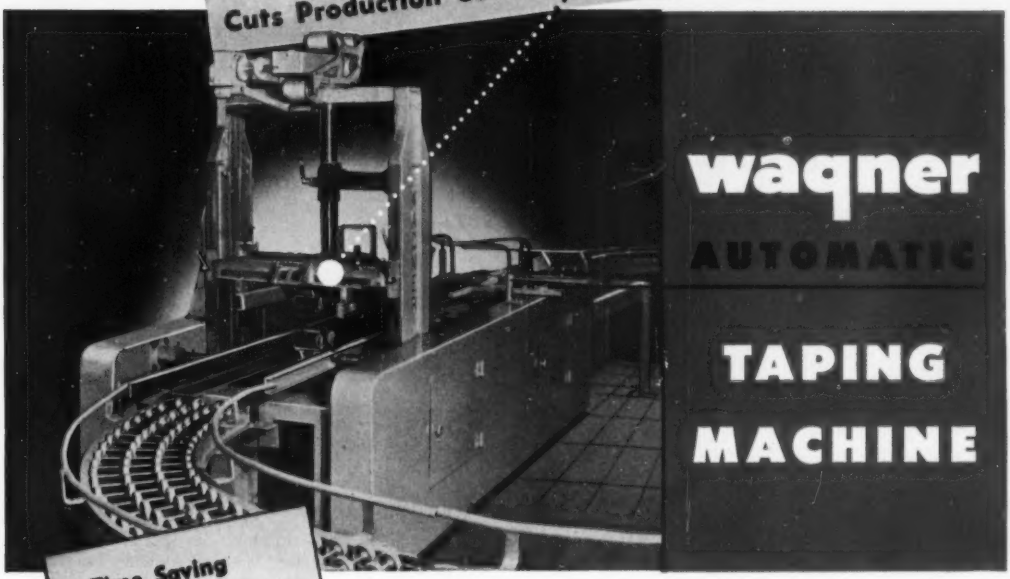
OCTAGONAL ICE-CREAM-PIE CARTONS introduced by Marathon Corp., Menasha, Wis., have a novel corner construction which gives them considerable vertical strength and is said to provide greater protection for the pie plate, which is supported at eight points rather than four. The cartons, made of Marathon's high-quality Q-board, are available with or without a cellophane iwndow and may be specially printed in the ice-cream manufacturer's own design. The stock-printed carton illustrated has a modern design and cellophane window. The octagonal shape permits simpler manufacturing processes than the conventional style, the supplier reports.

A NEW METHOD OF PRINTING CELLOPHANE that is said to solve the problem of dehydration in printed roll film has been announced by The Dobeckmun Co., 3301 Monroe Ave., Cleveland, Ohio. The new process, called "Normalizing," controls the moisture content of cellophane while it is being printed. Under ordinary conditions, the high-speed printing and attendant drying of inks results in loss of moisture in the film, making it brittle and susceptible to breakage. With the new method, cellophane retains its original life and pliability at levels recommended by the three manufacturers of the film. This insures optimum performance in heat sealing, flexibility, packaging strength and appearance. Printed "Normalizing" film is recommended for use in extremely dry or cold climates where film is stored in heated buildings; for products that are sensitive to odors from printing inks; and for products using DuPont-Olin LST and LSAT film and Sylvania 300 DS and 300 DSB film. Dobeckmun offers the new cellophane printed by rotogravure or by its "Lithopaque" aniline method.

A MACHINE THAT PACKAGES PILLS, CAPSULES OR tablets up to 600 per minute in any pliable heat-sealing material has been improved in a new low-priced model by the McKay-Davis Chemical Corp., 328 N. Westwood Ave., Toledo, Ohio. It will handle plain or printed cellophane, Pliofilm, aluminum foil, glassine and other similar materials. The new model was designed for simplicity of operation, to be handled easily by the average worker and is said to need very little maintenance. It gently handles the product through a simplified feed mechanism designed to prevent marring or breakage. Among new features reported is a continuous temperature control. Parts are obtainable to adapt the machine to various-sized items, including tablets up to an inch in diameter. A simple adjustment will produce a wide variation of units per pack. The unit stands 61 in. high, 26 in. sq., and weighs about 340 lbs.

THE ONLY CARTON CLOSING MACHINE OF ITS KIND IN THE WORLD!

Cuts Production Costs — **Permits Carton Re-Use**



waqner AUTOMATIC TAPING MACHINE

Time Saving Profit Making DESIGN FEATURES

- **Saves Labor.** Operates automatically without special supervision.
- **Saves Space.** Compact — requires minimum of floor space.
- **Saves Time.** Adjustable to variable speeds to fit your packing line.
- **Saves Accidents and Down Time.** Moving parts fully guarded, yet easy to reach for maintenance.

Now you can automatically tape cartons neater, faster and at far less cost. For the compact, efficient Wagner Automatic Taping Machine can be tuned to your production line to tape up to 50 cartons a minute.

Through Automatic Taping — you eliminate supervision, and slash carton-sealing labor costs. Your taping job is done simply and quickly . . . neatly. A neater package means greater carton acceptance, thus increasing carton return trips and drastically cutting single trip carton costs.

It's these extra savings that add up to sound plant economy. Investigate the new Wagner method of carton sealing. Write Wagner today!

WAGNER Automatic Taping Machine is used by leading breweries everywhere

FREE

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Name.....

Company.....

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Plants and people

A. G. Sharp has been appointed sales vice president of **Kimberly-Clark Corp.**, Neenah, Wis., succeeding **John R. Kimberly**, recently elected executive vice president. Mr. Sharp was general sales manager. The two promotions followed the retirement of **Ernest Mahler** from the executive vice presidency after 38 years in the industry. Mr. Mahler was a founder of the Institute of Paper Chemistry and of TAPPI.

A. G. Sharp

Daystrom Electric Corp., Poughkeepsie, N. Y., has issued exclusive license to Victor Industries Corp., New York, to use all patents owned by it covering the manufacture of collapsible tubes and containers. The agreement also gives Victor world wide sales rights for any equipment covered by the Daystrom patents.

Goodren Products Corp., New York, manufacturer of Goodstix, new transparent, moistureless sign and product label, has appointed **Austin & Austin, Inc.**, New York, to handle metropolitan sales.

The Riegel Paper Corp., New York, has opened a Cleveland office in the Hippodrome Annex. The new office will be in the charge of **William Lowenthal**, who previously covered the Cleveland territory through Riegel's Chicago branch.

The company has transferred **William Collins** from the New York office to its sales staff in Chicago.

Whitford A. Baldwin has been made manager of the Unit-Load Dept. of Acme Steel Products Div., **Acme Steel Co.**, Chicago, Ill. In addition, **Neil L. Anderson** has been appointed manager of the Steelstrap Department of the Division.

W. A. Baldwin (left) and N. L. Anderson

Jiffy Mfg. Co., Hillside, N. J., paper converter and maker of cushioned bags and pads, has promoted **Milton C. Weisenhorn** to a new position. Mr. Weisenhorn will establish Jiffy distributors throughout the United States and will train their salesmen in servicing users of packing and packaging materials. **Thomas E. O'Shea** has succeeded him as sales representative in Illinois and Wisconsin, with headquarters at 20 W. Jackson Blvd., Chicago.

The General Box Co., Des Plaines, Ill., has appointed **R. G. Hayden** plant manager in charge of the Wood Box Div. at Louisville, Ky. In addition, Emi. Hoizart was appointed production manager, filling the vacancy caused by the death of **D. F. Hahn.**

The Cochran Foil Co., Louisville, Ky., producer of aluminum foil for industrial purposes, has announced that its newly established Consumer Goods Div., to be known as **The Cochran Foil Products Co.**, will be supervised by **Orville K. Schmied**, general manager; **Everett B. Allen**, director of sales; and **Harry B. W. Snelling**, field sales manager.

O. K. Schmied (left) and E. B. Allen

H. B. W. Snelling

D & R (Donofrio and Roosevelt) Industries, Inc., 920 Ford Bldg., Detroit, Mich., have bought all the assets of the C & R Packaging Co., Detroit, Mich., specialists in the export packaging and preservation of automotive parts. **Thomas F. Donofrio** is president of the new company. Other officers include **A. M. Donofrio** and **John M. Donofrio.**

The three glass container divisions and the new **McKee Glass Division** of **Thatcher Glass Mfg. Co., Inc.**, in New York, are now in a new location, 11 W. 42nd St., New York. Head office for all divisions remains in Elmira, N. Y. **Joseph P. Swift** continues as branch manager of the glass container divisions, and **Charles A. Scully**, sales manager of the McKee Glass Div., will also have charge of national chain sales.

Announcement has been made of the formation of **Imperial Adhesives Co.**, 10–05 50th Ave., Long Island City, N. Y., by **Alvin Edison** and **Jules Yurman**, formerly with National Adhesives, Div. of National Starch Products, Inc.

Continental Can Co., New York, has appointed two new sales managers in its Decoware line—**Robert G. Hockmuth** for the Eastern Div. and **Donald L. Weir** for the Central Div. Mr. Hockmuth will have offices in New York. Mr. Weir will be located at Chicago.

R. C. Hockmuth (left) and D. L. Weir

Standard Bag Sales Co., Inc., has announced occupancy of its new plant at 29–10 Hunters Point Ave., Long Island City, N. Y. The plant houses manufacturing facilities previously in Brooklyn and the executive offices, formerly in New York.

Harry Wein has been appointed as representative in Pittsburgh, Pa., for the **Crystal Tube Corp.**, Chicago, converters of cellophane and other packaging materials. Mr. Wein will cover parts of Eastern Ohio and Western Pennsylvania.

Foil Kraft, Inc., Los Angeles, has completed and moved into its new plant at 1905 Sichel St., Los Angeles.

Interchemical Corp., Printing Ink Div., New York, has completed construction of a new branch office and service station at 1501 Turtle Creek Blvd., Dallas, Tex. The new facility provides better ink service to printers and lithographers, specializing in package printers' needs.

Dr. Carlyle G. Caldwell has been elected an assistant vice president of **National Starch Products Inc.**, New York. Dr. Caldwell, National's research director since 1948, is an authority on starches, adhesives and resins and the author of many of National's significant patents.

Dr. C. G. Caldwell

National Plastics Industries, San Francisco, have acquired the plastic box division of the **Fleishhacker Paper Box Co.** Under an agreement, the former will manufacture plastic boxes in the Fleishhacker Bldg., 401 Second St., and will fabricate other plastic articles in their

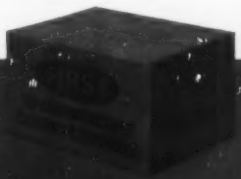
Every H & D Box is a "Thoroughbred"

This is an excellent example of how to get full value from your shipping box. Attractively printed, this H & D corrugated box serves a two-fold purpose:

***1.** It acts as a travelling billboard from factory to store—a constant reminder for the product as it travels throughout the country.*

***2.** The brilliant blue lettering makes it ideal for mass display at point of sale, increasing impulse purchases.*

H & D is ready to help you get full value from your shipping boxes. Get all the facts about the many advantages H & D boxes offer—write today for the book "Pack to Attract." Hinde & Dauch, 5224 Decatur Street, Sandusky, Ohio.



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Every Second...

your competitor who wraps with this machine, betters your packaging production

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The perfect wrapper for:-

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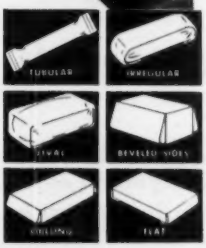
- PREPACKAGED MEATS
- BANDAGES, CAMERA FILM
- ICE CREAM BARS AND 101 OTHER VARIED ITEMS



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With the continuous feed Campbell Wrapper you effectively meet competition by *raising output — cutting unit costs!* Packaging from 150 to 300 single or multiple units per minute is every day operation with this modern machine, and, with only one person to feed and operate machine. "Float" wrapping does away with costly breakage, too — regardless of how oddly your product is shaped, how solid or fragile its make-up. Wraps with materials of all types, perfectly positions imprinted labels and package seals most any way desired — including hermetical sealing with or without tear strips. Only competition *using the same machine* can match your packaging production when you use the Campbell Wrapper. Send us a sample of your product for further details.

We are contributing to the nation's defense program by providing a large part of our increased production facilities for building precision armaments.

New York: 55 West 42nd St.

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HUDSON-SHARP MACHINE CO. • GREEN BAY, WIS.

Manufacturers of Aniline and Gravure Presses, Folders, Interfolders, Laminators, Waxers, Embossers, Slitters, Sheeters, Roll Winders, Packaging Machines, Creepers and Tissue Converting Units.

Plants and people

own plant at 425 Divisadero St., both in San Francisco.

Edson E. Foster has been appointed advertising and sales promotion manager of the **Chase Bag Co.**, Chicago, **Ralph Farnham** Southern promotion manager, and **James F. Floyd** a Chase salesman in the Orlando district.

The Arabol Mfg. Co., New York, has promoted **Frank H. McCourt** to manager of the St. Louis manufacturing and sales operations. **Henry R. Froehlig** will succeed Mr. McCourt in charge of the Product Engineering Dept. in New York.

The Owens-Illinois Glass Co. has announced several changes among its top executives, five of them associated with the Glass Container Div.

Smith L. Rairdon, vice president and division general sales manager, has been named director of marketing, a newly created position. He will be succeeded in

S. L. Rairdon (left) and S. F. Davis

his old post by **Sidney F. Davis**, manager of food industries since 1947. **C. G. Bensinger** will be general manager of the Glass Container Div., succeeding **Henry S. Wade**, who has been appointed vice president and general manager of the Pacific Coast Div.

In addition, **George S. Babcock** was elected a company vice president, and **Hugh C. Laughlin** executive vice president and member of the board.

The company has acquired approximately 70 acres of land in the Parkrose Area of Portland, Ore., as a possible site for a new glass-container plant.

N. T. Gates Co., specialists packaging materials for the hosiery, textile, and other industries, moved November 1st to larger quarters in the Drexel Bldg., 5th & Chestnut Sts., Philadelphia.

Harold D. Woodmansee has been named branch manager of the newly created Cincinnati sales office of **Monsanto Chemical Co.'s** Plastics Div. Mr. Woodmansee had been serving as the division's Detroit branch manager. His Detroit

Makes good merchandise sell better...

Hold Kodapak Sheet up to the light. Clear as crystal, it sparkles with brilliance. This you see instantly, realize that here is a material endowed with package-glamour, with real sales-appeal. But what you can't see is vital, too—the sheet-after-sheet uniformity that makes Kodapak always efficient, always economical to use.

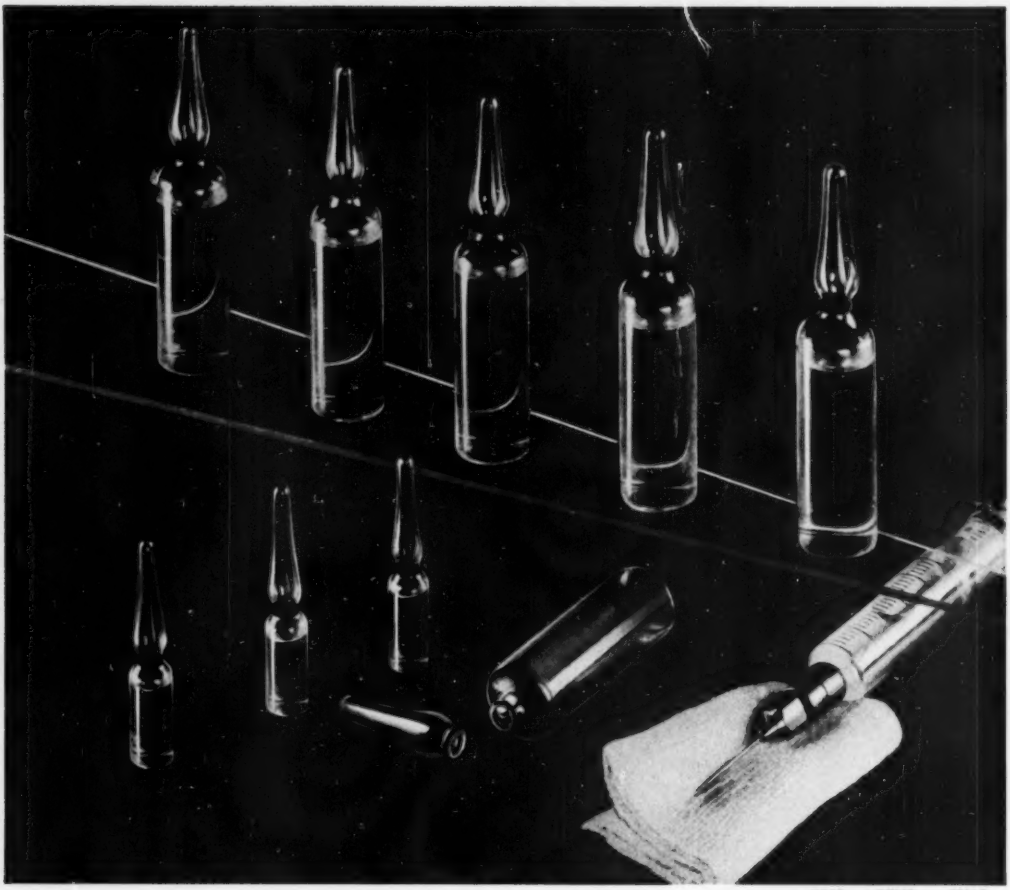
For further information, consult your local representative, or write Cellulose Products Division, Eastman Kodak Company, Rochester 4, N.Y.

Sales offices: New York, Chicago, Dallas. Sales representatives: Providence, Cleveland. Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.) Toronto, Montreal (Paper Sales, Limited).

Swim suits, courtesy of Rose Marie Reid

Kodapak Sheet

"Kodapak" is a trade-mark



GRIP . . . BEND . . . SNAP—
Neutraglas Color-Break Ampuls are ready to use!

Now-give your product perfect protection in new KIMBLE COLOR-BREAK AMPULS

Here's the package you've always wanted—can't be tampered with . . . keeps your product pure and unadulterated . . . and, now, *easy to open.*

Neutraglas Color-Break* Ampuls are inert to their contents. Solvents, chemicals, sterilizing agents—even distilled water—find these ampuls persistently indifferent to chemical action.

There's no filing . . . no scoring . . . no sawing! Simply hold one of these new ampuls in your hands . . . bend it, and the stem snaps off! Presto, it's ready for use. Think of the convenience you can offer the users of your products.

The secret of this revolutionary Kimble development—the result of nine years' work—is in the patented blue color band around the neck of the ampul. This color-break feature is the greatest improvement in ampuls since the development of Neutraglas containers. *Decide today to modernize your ampul package.*

*Owens-Illinois Trade Mark

KIMBLE GLASS COMPANY
Toledo 1, Ohio

Subsidiary of Owens-Illinois Glass Company

Plants and people

duties have been assigned to **Donald H. Kocher.**

R. E. Bundy, of Fibreboard Products, Inc., San Francisco, has been appointed executive vice president of the firm. **M. E.**

R. E. Bundy (left) and M. E. Sanford

Sanford, general production manager, succeeds Mr. Bundy as vice president in charge of production.

James L. Coker, president of **Sonoco Products Co.,** Hartsville, S. C., and recently elected an honorary director of the **National Fibre Can & Tube Assn.,** has been presented with a bronze plaque in recognition of his services to Sonoco.

S. Posner Sons, Inc., distributors of paper and packaging products, formerly of Long Island City, N. Y., is now occupying its new plant at Metropolitan & Scott Aves., Brooklyn, N. Y.

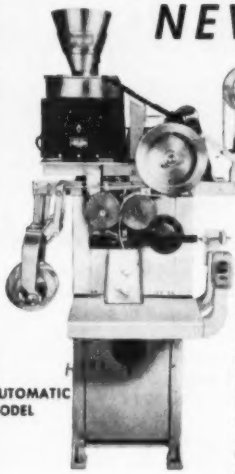
The Bakelite Co., Div. of Union Carbide & Carbon Corp., New York, has announced the formation of a new sales unit, the Industrial Products Dept. **Howard Smith** has been named manager. The new department will be responsible for operations of the consolidated Surface Coatings Div., Halowax Products Div. and Sheet and Foil Div. **Carl W. Patton** has been named manager of the Surface Coatings Div., **M. E. Delaney** manager of the Halowax Products Div., and **T. W. Sharp** will continue as manager of the Sheet and Foil Div.

H. Smith

Stein, Hall & Co., Inc., New York, has announced the resignation of **Oliver H. Clapp** as vice president and director.

Coseco (Coast Service & Converting), Los Angeles, has moved its plant and offices to larger quarters at 1300 Santa Fe Ave., Los Angeles. The company maintains trade converting facilities for sheeting, slitting and rewinding, die cutting, band sawing, retail packaging and new prod-

NEW! WRAP-ADE UNIT PACKAGERS



AUTOMATIC MODEL

The WRAP-ADE UNIT PACKAGERS are *low cost* machines that perform an entire cycle of packaging operations—including feeding, filling, forming and sealing. They have been built on the simplest possible principles conducive to high speed automatic packaging, versatility, and low upkeep costs. The variety of products handled is limitless and practically every type of heat sealing material can be used.

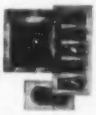
RANGE OF SIZES: Can be designed for any products which require packages up to 3" x 7".

CAPACITY: (Depends on product. Below are examples.) *Small items*—such as Tablets: 300-350 per minute. *Units the Size of a Bottle Cap:* 125 per minute (single row*). *Free Flowing Powder Packets:* 2" x 3"—70 per minute (single row*). *Duplex Feed, where practical, will double speed.

SEMI-AUTOMATIC MODEL

FEEDING MECHANISMS FOR ALL TYPES OF PRODUCTS:

- Conveyor
- Magazine
- Rotary Table
- Volumetric Filler
- Automatic Hoppers



Write today for full information on these and other WRAP-ADE Packaging Machines.

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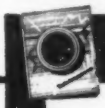

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***Howard Seal Bags are controlled* 8 WAYS!**

1. For quality of raw flake
2. For thickness of extrusion
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4. For flexibility
5. For elimination of pinholes
6. For specific style and shape
7. For exact size
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LOW COST BAGGER

FAST— EASY TO USE!

Handles 101 Small Products

ONLY $60.00

Slightly higher with extra large bag chute.

The Anderson Bagger, Model 134, is a simple, low cost machine that is doing an outstanding job for thousands of users in many industries. Operator can fill a bag and place it in a carton in one operation.

Stainless steel bag chute, capacity 200 bags, adjustable to bag sizes. Blower, equipped with air filter, opens bag and keeps it free from foreign matter.

Easy to operate at high speed with a minimum of effort. Here is a machine that pays for itself quickly. Write today and tell us your product.

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"When packaged in 'fur' products purr"

And the 'fur' favored by most packagers is flock —Claremont Flock . . . those tiny clipped-lengths of luxurious cotton and regal rayon. We market this irresistible outer raiment in bulk to paper processors, product manufacturers, packaging specialists and display builders who, for dramatic enrichment, apply it to paper, glass, metal, cork, plaster and similar materials.

Flock is a fascinating stimulant—and for pennies, an ounce adds a pound of allure. Check your suppliers—or, for complete information, feel free to contact us direct.

CLAREMONT FLOCK

Claremont Flock . . . the plush that sells! Available (18 brilliant colors) from paper suppliers, affixed to sheets and boxboard. Can be printed, stamped, scored and die-cut. Imagination, alone, limits its uses!

CLAREMONT WASTE MANUFACTURING COMPANY

The Country's Largest Manufacturer of FLOCK

CLAREMONT, NEW HAMPSHIRE

TOLEDO SPEEDWEIGH OVER-UNDER SCALES

HERE'S *new speed with accuracy* in check weighing, packaging. 3 sizes —to 5 lb., to 20 lb., to 50 lb.! Shadow-free wide-angle reading . . . accurate to ¼ of an ounce . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers . . . choice of platters and scoops. Write for bulletin 1416. Toledo Scale Co., Toledo 1, Ohio

TOLEDO®
Headquarters for SCALES

Plants and people

uct development, and also serves as West Coast mill agent for packaging products.

The Dobeckmun Co., Cleveland, Ohio, has obtained new storage facilities for its "Metalam" barrier materials in the Overland Terminal Warehouse, 1807 E. Olympic Blvd., Los Angeles. The new warehouse will make possible 24-hour delivery service to industrial users in California, Nevada, Arizona and Utah.

H. V. Knowles

The company recently appointed **Harry V. Knowles** to the Packaging Sales Div. of the firm's New York office, to specialize in textiles, bakery and meat products, where cellophane packaging is expanding steadily.

The opening of the **H. H. Heinrich Co.'s** new showroom-office at 111 Eighth Ave., New York, and **Mr. H. H. Heinrich's** 25th year in business were marked recently at a luncheon attended by more than 250 persons. The company is American representative of the German printing-machine firm, Windmoeller & Hoelscher.

The Armstrong Cork Co., Lancaster, Pa., has announced the retirement of **V. A. Tomasson**, member of the company's Glass and Closure Div., New York district office, after 49 years of service.

Leon Zuckrow has been appointed sales engineer with the **Jerome F. Gould Corp.**, New York, export packers, principally to service Eastern Seaboard shippers performing defense contracts.

The Ajax Box Co., Chicago, Ill., has appointed **John B. Taylor** field sales manager of its Flexible and Single Faced Corrugated Div. He will concentrate on sales of the firm's Bend-N-Rap and Ajax products.

J. B. Taylor

Sutherland Paper Co., Kalamazoo, Mich., has appointed two new men to its field sales force to cover newly created territories: **William Vaughan** in the Chicago area, and **Daniel W. Marks** in the Northeastern part of Texas, with headquarters in Dallas.

A new program announced by Sutherland is the placement of field service en-

the Switch

Shopping for bed sheets and ending up with ice tongs means good packaging. Attractive displays help to swerve a prospect to serve your purpose which is SALES!

No matter how good your product is a BROOKS and PORTER package will make it look BETTER. It costs no more to have the BEST!

Brooks AND Porter INC.

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...ETERNAL VIGILANCE and PROTECTION

PAPER BOARD and CORRUGATED PAPER PRODUCTS

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EVergreen 6-2400

Plants and people

gineers at strategic points throughout the country to give prompt service to customers in their areas. **Eugene Yeargin** will be at Kannapolis, N. C.; **Joseph Schumacher** at Hollis, N. Y.; **Harley P. Hunter** at Kansas City, Mo.; **Claude Parr** at Cincinnati and **John E. Kliment** at Chicago.

R. C. Russell

Ralph C. Russell has been appointed executive vice president of **Fairbairn Tape & Label Co., Inc.**, San Francisco, Calif. Mr. Russell has had 25 years of experience in printing and with leading makes of label machinery.

The Dow Chemical Co., Midland, Mich., has named **W. L. Nelson** to head a new sales group for saran film as used in household packaging. **Gene A. Connor** has been named a plastic molding-powder salesman for Dow in Chicago.

Cincinnati Industries, Inc., Cincinnati, Ohio, manufacturers of stretchable materials, have adopted a new trademark. "Cindus," inspired by contraction of the company name, will be used as identification for the company's entire line of products.

cindus
TRADE MARK

Angier Corp., Framingham, Mass., waterproof paper manufacturer, and **Specialty Converters, Inc.**, E. Braintree, Mass., have announced a cooperative agreement giving broader national distribution of the products of the two firms.

A. D. Hoeppner

A. D. Hoeppner, formerly manager of **Bemis Bro. Bag Co.'s** Plastic Bag Dept. in Minneapolis, has been appointed supervisor of plastic bag sales at the company's general offices in St. Louis. **H. E. Illich** will fill the Minneapolis post.

American Cyanamid Co., New York, has created three new positions in the Paper Chemicals Dept. **A. C. Bate** has been named Eastern regional manager, with headquarters in Boston, Mass., to supervise sales in New England and in Atlan-

NOW! *Special Design* ENVELOPES-BAGS

GENERAL LITHOGRAPHING & PRINTING CO.

OFFSET PRINTING - ENVELOPES - BAGS - CELLOPHANE PRINTING

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►HAND JAR AND BOTTLE FILLER

For the manufacturer who needs fast, accurate, spill-proof hand fillings. Flow of liquid or cream controlled by simple, hand-operated valve.

- Pint, quart, half-gallon, gallon sizes (metal stands at extra cost)
- Available in tin, monel metal or stainless steel
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- Moderately priced

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Division of J. Rabinowitz & Sons, Inc.

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REG. U. S. PAT. OFF.

the "TIE that TALKS"?

Tie up your products with Print-Ad String, and wherever they go they tell people your name or slogan, they give directions, they measure footage, they provide grade markings—they tell whatever you want told . . and tell it in a novel, colorful way.

Here's a tremendously strong COTTON tie—in thicknesses down to .003, widths down to ⅛", in any color or combination of colors you want—a tie that won't mar or dent the edges of articles tied in it—won't slip in the knot—won't stretch—and adds a smart touch to your package.

Mighty useful for manufacturing short-cuts, too. Be informed! Mail coupon now for FREE booklet full of valuable ideas!

BETTER TYING

Holds parts firmly for assembly, cutting, drilling . . Holds parts in finished assemblies . . Measures running footage . . Gives directions, grade marks, identifications.

BIG HELP IN THE PLANT

Good-looking all-cotton ties! . . Flat, won't mar or dent edges of boxes or merchandise . . Won't slip in the knot . . Non-stretch, great strength . . Also used as rip-cord opener, from candy bars to survival kits . . Ties anything!

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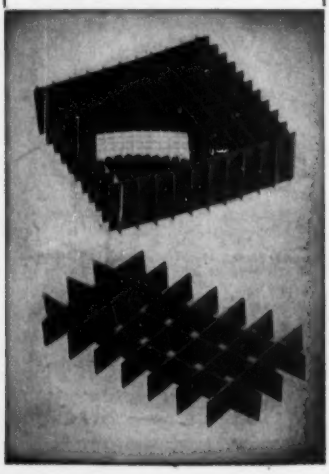

Plants and people

tic Seaboard states as far south as Western Virginia. **K. E. Youngchild** has been named Southern regional manager with headquarters in Mobile, Ala., to supervise sales from Richmond, Va., to Texas and Oklahoma. **George E. Fromm** has been made Western regional manager with headquarters in Chicago in charge of all Middle West and Western Sales.

F. J. Blume

Frederick J. Blume has been appointed manager of national accounts in container sales for the **Rheem Mfg. Co.**, of New York. Mr. Blume, formerly manager of Rheem's Equipment Container Div. in Baltimore, will make his new headquarters in New York.

E. E. Miranda has been named treasurer of the **McKay-Davis Packaging Corp.**, West New York, N. J. He remains export manager for the **McKay-Davis Chemical Corp.**, Toledo, Ohio, which supplies the packaging machines to the New Jersey plant.

Warren E. Miller has been appointed Western Div. sales manager for the Chemical Corp. with headquarters at 332 S. Michigan Ave., Chicago. He will service the pharmaceutical and food trade.

E. E. Miranda

A new sales office in the Ford Bldg., Detroit, Mich., has been established by the company to serve the automotive parts field in the Michigan area with custom packaging service and special packaging machinery and materials. **Albert Fedell** and **Earl K. Cobb** have been named sales representatives.

Bernard J. Echlin has been appointed industrial relations manager of **Lynch Corp.**, Anderson, Ind., covering the company's five plants in Ohio and Indiana.

Edward F. Boyle has been appointed sales representative for **Fabricon Products, Inc.**, River Rouge, Mich., covering Western Pennsylvania and Western West Virginia.

Dr. Max Y. Seaton has been named senior vice president and technical coordinator of the Chemical Divisions of **Food Machinery & Chemical Corp.**, San Jose, Calif. FMC Chemical Divisions in-

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GLUERS and CEMENTERS

APPLY GLUE TO LABELS
FOR
BOXES - BOTTLES - CANS
PARCEL POST PACKAGES

SAVE 35% LABOR. Speedy machine-gluing instead of slow brush-daubing. Round, square and die-cut labels glued. No adjustment except for glue coating. Ideal for short runs and production.

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7" LABELER
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PRACTICAL CONSTRUCTION. Bronze bearings. Calibrated dial glue control. Hand & motor driven. Use vegetable or resin glue. 7", 12", 16", 22", 28", 34", 42" wide.

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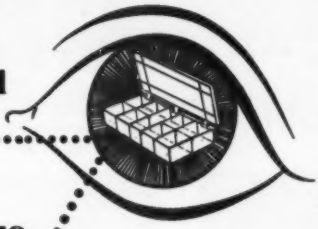
does your package have

eye-appeal

buy-appeal?



Customers reach for the product in the eye-catching package. A sparkling, new GILBERT PLASTIC package specially designed for your particular needs will make them reach for yours!

GILBERT PLASTICS is equipped to handle all your packaging problems from the planning and designing stage to the finished product. Give your product *eye-appeal* to insure its *buy-appeal*. Contact GILBERT PLASTICS *today!*

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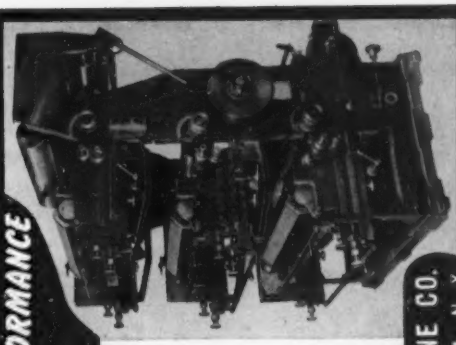

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Ask for descriptive folders on this machine.

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in Cellophane *

The customer buys where she can **see** what she's buying. And where the product is freshest

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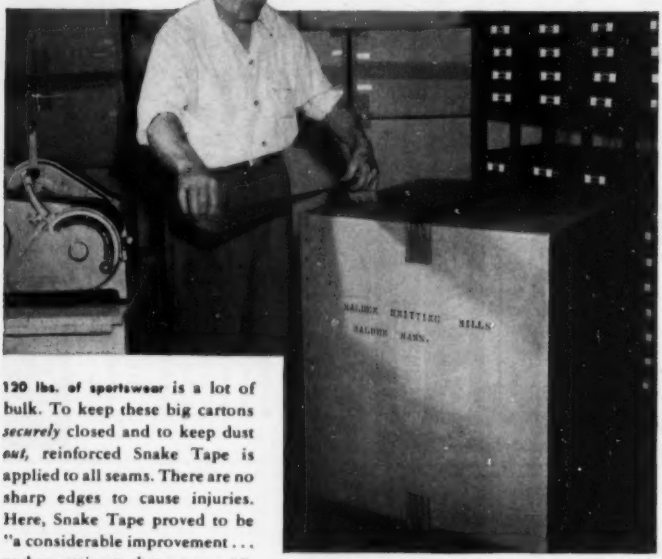
Angier

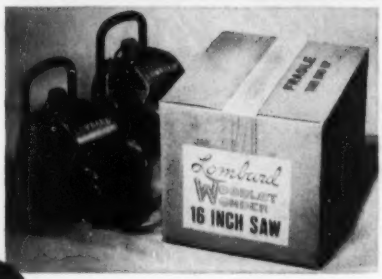
the SNAKE TAPE *way*

saves time, seals cartons stronger



120 lbs. of sportswear is a lot of bulk. To keep these big cartons *securely* closed and to keep dust *out,* reinforced Snake Tape is applied to all seams. There are no sharp edges to cause injuries. Here, Snake Tape proved to be "a considerable improvement . . . and we estimate that we save 10-15% in packaging time."

Center-seam sealing with Snake Tape "saves about half the time required by the previous method." It makes a neater package. Its strap-like strength eliminates damage due to tape failure. Isn't center-seam sealing with Snake Tape an idea for you?



- Waterproofed!
- Reinforced!
- Six widths!
- Easily dispensed by "cut-off" type machines!

Accepted for parcel post, railway express, air express, and truck shipments, center-seam sealing with Snake Tape is also accepted for carload and LCL rail shipments where rule 5, section 1 (c) of Uniform Classification applies.

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Plants and people

clude Westvaco, Niagara, Ohio-Apex and Buffalo Electrochemical Co. Dr. Seaton's office will be in New York.

H. R. Anderson

Harry R. Anderson has been appointed manager in charge of the new Flav-O-Pak Produce Prepackaging Div., **Oneida Paper Products, Inc.**, Clifton, N. J. The Flav-O-Pak Produce Prepackaging Plan enables supermarkets to switch from bulk produce to a pre-packaging operation in a matter of days.

G. F. Henschel

American Can Co., New York, has appointed **George F. Henschel** manager of sales for the Atlantic Div. Mr. Henschel succeeds **B. R. Wood**, who has been named assistant general manager of Canco's general purchasing department.

William V. Schusterman, package designer, has announced new headquarters, located at 101 W. 31st St., New York.

National Container Corp., New York, has established a new corrugated paper products converting plant at Illinois Ave. & Terminal Railroad, E. St. Louis, Ill., with **William J. Gass, Jr.**, as sales manager.

Owens-Corning Fiberglas Corp., Toledo, Ohio, has appointed **Burt Schultz** to the Public Relations Dept., with headquarters in the Fiberglas Bldg., 16 E. 56th St., New York.

F. P. Fletcher & Sons, Pasadena, Calif., packaging specialists, have appointed **W. D. Long** as research and development engineer of packaging and crating. Mr. Long, consultant to the Government on packaging and "pack-out" problems during and since World War II, will supervise the new testing laboratory now being installed by Fletcher and will direct packaging-design and development work.

W. D. Long

Joseph H. Gillen of **Bensing Bros. & Deeney**, Philadelphia, Pa., has been ap-

(*This article continued on page 184*)

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There is valuable data — worth dollars and cents to you — in the literature and samples described below.

EQUIPMENT • SUPPLIES • SERVICES

PLASTIC VIALS. Catalog sheet lists the advantages of packaging in plastic vials and illustrates several hardware and notion items which may be packaged in these containers. Lermer Plastics, Inc. (L-251)

WATERPROOF CASE LINERS. Data on "Submerso-Pak" moisture-proof, watertight, creped asphalt-laminated Kraft paper case liners for protection of a wide range of products. Cincinnati Industries, Inc. (L-252)

HEATER BARS. Data sheet and price list on alloy surface and "Teflon-Fiberglas" surface heater bars for use in Vertrod "Thermal Impulse" heat sealing machines for all types of plastic films. Vertrod Corp. (L-253)

PRINTED TISSUE. Samples of four single and multicolor printed tissues which are used to protect soft goods and hard shiny surfaces of appliances, etc. Green Bay Tissue Mills. (L-254)

CANDY WRAPPING. A high speed machine for over-wrapping candy boxes with cellophane or other film is described in a folder issued by Hayssen Mfg. Co. (L-255)

"TRANSWRAP" FOR LIQUIDS. Folder explains the operations and advantages of packaging and marketing liquid products in the pillow type packages which are automatically made and filled on "Transwrap" machines. Transparent Wrap Machine Corp. (L-256)

BAG WEIGHT CALCULATOR. Handy plastic slide chart permits rapid calculation of weight-per-thousand for polyethylene bags of any size or gauge. Durethene Corp. (L-257)

FILLING MACHINES. Bulletin on a universal vacuum, gravity and pressure filling machine with stainless steel valves for filling all types of solutions in bottles, jars and cans. Perl Machine Mfg. Co. (L-258)

VACUUM FEED LABELING MACHINE. Bulletin explains the features and operation of the Mercury "Vacumatic" heat sealing and labeling machine which feeds, folds and seals label and bag in one automatic operation. Mercury Heat Sealing Equipment Co. (L-259)

LABEL PRINTER. Details on a compact unit for printing simple labels on plain or gummed-back roll stock. Markem Machine Co. (L-260)

RINSER FOR GLASS CONTAINERS. Described and illustrated is a machine that automatically air-cleans and water-rinses glass containers of various sizes and shapes. Standard-Knapp Div. of Hartford-Empire Co. (L-261)

VAPOR CORROSION INHIBITORS. Technical bulletin on treated envelopes and papers which give steel and aluminum positive protection from corrosion by emitting a dry vapor. Berlin & Jones Co., Inc. (L-262)

INTERIOR PACKAGE FOR PHARMACEUTICALS. Folder explains use of "Kimpak" cellulose wadding as a protective interior wrap for various glass pharmaceutical containers. Kimberly-Clark Corp. (L-263)

DESICCANT FOR METHOD II PACKAGING. Bulletin explains the provisions of MIL-D-3464 and MIL-P-116A insofar as they pertain to use of desiccant materials for dehumidification. Details on use of "Desiccite 25" to meet these requirements. Filtrol Corp. (L-264)

HANDLING FILM ADHESIVES. Information on the various types of adhesives for transparent films and how to use them properly. Includes a chart of commonly used transparent films. National Adhesives. (L-265)

GLASSINE AND GREASEPROOF PAPERS. Booklet gives the complete story of the technical qualities of these papers, and the manufacturing methods and recommended uses of them in various fields. Riegel Paper Corp. (L-266)

VACUUM FILLER. Details, diagrams and specifications on the U. S. Model B-49 "straight-line" vacuum filler, a semi-automatic unit for filling liquid products into containers of all types from glass sprinkler tops to gallon sizes. U. S. Bottlers Machinery Co. (L-267)

PACKAGE WRAPPING AND FILLING MACHINES. Details on various textile, food and notion products which are wrapped and packaged on machines manufactured by Package Machinery Co. (L-268)

JAR INVERTING AND CLEANING LINE. A complete unit for rinsing, cleaning and sterilizing wide mouth glass jars and cans is described in a bulletin issued by the Chisholm-Ryder Co. (L-269)

MIDGET HEAT SEALER. Details on a small motor-driven rotary heat sealer for sealing cellophane, glassine, and paper and cloth-backed laminates. Doughboy Industries, Inc. (L-270)

SLITTER AND REWINDER. Booklet contains extensive data on the design and performance of the Beck razor blade slitter and rewinder and attachments for it. Charles Beck Machine Corp. (L-271)

BAG MACHINE. Information on a machine which makes flat, gusseted and satchel bags, either entirely from cellophane or with fronts of cellophane and backs of paper, in a wide range of sizes. Hol-Bag, Inc. (L-272)

"RAYCO" FLOCK. Booklet enumerates the forms and materials in which "Rayco" flock is obtainable and suggests various uses for each type. The Rayon Processing Co. of R. I. (L-273)

LABEL MOISTENER. A 4-inch motor driven unit for speeding the moistening of gummed labels and other gummed stickers is described in a bulletin issued by Potdevin Machine Co. (L-274)

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EQUIPMENT • SUPPLIES • SERVICES

"VISKON" NONWOVEN FABRIC. Data on applications of this versatile nonwoven fabric in meat wrapping, decorative pennants and banners, Christmas wraps, tea bags and other packaging applications. The Visking Corp. (L-275)

COOLER-PROOF GLUE. Folder describes an improved cold-water proof glue for effectively handling the majority of labeling and storage conditions encountered in the glass packing industries. Paisley Products, Inc. (L-276)

CONSTANT TENSION BACKSTANDS. Bulletin on single position backstands with pneumatic running belt tension control, giving uniform tension throughout the entire winding of each roll of material. Dilts Machine Works. (L-277)

SACKING SCALES. Data on Exact Weight sacking scales which bag, weigh and visibly check-weigh any free flowing material in a continuous operation. The Exact Weight Scale Co. (L-278)

SLITTING CELLULOSE FILM. Booklet troubleshoots many of the difficulties normally encountered when slitting cellulose film and suggests methods for avoiding them. British Cellophane, Ltd. (L-279)

ANTIOXIDANT. Technical bulletin on DI-tert-BUTYL-para-CRESOL, an antioxidant and odor and rancidity inhibiting material for various fats and oils, waxes and petroleum products. Koppers Co., Inc. (L-280)

POWDERED MILK PACKAGING EQUIPMENT. Information on, and diagrams of machines for packaging dry milk powders in individual-size and family-size rectangular lined cartons and in glass jars of various sizes. Pneumatic Scale Corp., Ltd. (L-281)

GUMMED TAPE PRINTER. Bulletin describes the construction, operation, and features of the "Rotary-X-Press" for high speed printing on gummed and ungummed paper, plastic, foil, metallic and pressure sensitive tape stock. Ever Ready Label Corp. (L-282)

PACKAGING IN ACETATE FILM. Booklet describes the advantages of packaging in acetate film and illustrates many packages which take advantage of this film's transparency and printing qualities. E. I. du Pont de Nemours & Co. (L-283)

MACHINES FOR CARTONING, WRAPPING AND SPECIAL PACKAGING. Brochure contains information on various automatic machines for cartoning tubes, jars and loose products in single and multiple units, for applying paper and film wraps to various packages, and for banding and other special packaging operations. F. B. Redington Co. (L-284)

BAG-SEWING CONVEYOR. Information on a special V-Belt bag-sewing conveyor for use in conjunction with post-mounted bag closing machines. Richardson Scale Co. (L-285)

CONVEYING EQUIPMENT. Catalog illustrates a complete line of unscrambling, accumulating and assembly tables, bottle, jar and can conveyors, horizontal, incline and decline conveyors, power units, pallet dollies and other materials handling equipment. Numerous installation photographs. Island Equipment Corp. (L-286)

PRINTING INKS. Booklet explains the importance and place of printing ink in today's civilization, traces the history of printing ink and shows how today's inks are tailored to meet a variety of printing and packaging needs. National Association of Printing Ink Makers, Inc. (L-287)

SPECIFYING CORRUGATED BOXES. Booklet gives hints on factors to be considered when establishing specifications for corrugated shipping containers. The Hinde & Dauch Paper Co. (L-288)

ROMANCE OF WAX. Folder traces the history and various uses which have been made of waxes from the earliest times to the present. Barcco Oil Co. (L-289)

AUTOMATIC PACKAGING MACHINE. Details on the "Simplex-O-Matic," a unit which combines bag making, weighing or measuring, filling, sealing and checking in one continuous automatic operation. Option of net weight or volumetric filling. Simplex Packaging Machinery, Inc. (L-290)

CODING AND MARKING EQUIPMENT. Data on coding and marking equipment for attachment to nearly all major wrapping machines and for printing filled or unfilled multi-wall bags and cartons. Industrial Marking Equipment Co. (L-291)

VACUUM PACKAGING SELF-SERVICE MEATS. Booklet on the "Flex-Vac" machine for vacuum packaging and sealing pre-sliced meat products into printed bags for self-service marketing. Standard Cap & Seal Corp. (L-292)

INTERMITTENT DRIVES. Folder describes a new patented roller gear drive for obtaining extremely high speed intermittent motion on automatic machines, with the need for maintenance held to a minimum. Ferguson Machine & Tool Co., Inc. (L-293)

PROPER SEALING WITH GUMMED TAPE. Wall chart for shipping room which describes storage methods, care of automatic dispensers and proper methods for applying gummed tape to achieve maximum package protection. The Gummed Industries Association. (L-294)

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Lightness creates hazards all its own . . . to fully protect figurines, pictures, glass coffee makers, etc.; to stop shock damage, nothing equals PROTEX Pads and Blankets.

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Any product that will break, crack or chip easily, such as pottery, glass or sensitive instruments requires the fullest shock protection . . . there is none finer than the Superior Cushioning of PROTEX Pads and Blankets.

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1000 N. Halsted St., Chicago 22, Illinois

NATIONWIDE SALES & DISTRIBUTION

Plants and people

(This article continued from page 180)

pointed manager of the company's Wakefield, Mass., aniline-ink-making plant. **Frank Schafer** has also been assigned to the Wakefield plant, to service the company's accounts in New England.

Robert I. Bloom has joined the **Wilpet Engineering & Mfg. Co.**, Kearney, N. J., injection molders and mold-making specialists, as sales engineer in new product development.

Al-Craft Display Co., designers and manufacturers of sample cases, trays, rolls and displays, announce the removal of their offices to 12 E. 18th St., New York 3.

Whitney & Co., Inc., Leominster, Mass., manufacturers of paper boxes, have opened a new sales office at 1338 Dixwell Ave., Hamden, Conn. Sales manager is **John D. Baldwin** and his associate is **A. Lloyd Peck.**

Lever Bros. Co., New York, has opened a new integrated research center at Edgewater, N. J. The packaging laboratory is equipped to test containers, wrappings, labels and inks.

Owens-Corning Fiberglas Corp., Toledo, Ohio, has announced the formation of the Packaging Sales Div. to bring about closer cooperation between Owens-Corning sales and research personnel and manufacturers, fabricators and users of Packaging materials. The new division is headed by **Roy J. Black.** Associated with Mr. Black are **William B. Morrison** and **Harry H. Chapman.** The need for the division was created by the increase in packaging applications of Fiberglas textile products.

Thorwald A. Carlson, 59, well known in the packaging industry, died on Oct. 24 at Madison, Wis. Mr. Carlson directed packaging operations of the military forces during World War II as chief of packaging research at the U. S. Forest Products Laboratory, where he was a research engineer for 31 years. In 1926 he was granted a public patent for the Carlson Score Tester for testing fibreboard containers. He has written several technical articles published in MODERN PACKAGING. At the time of his death he was chairman of the ASTM committee on shipping containers.

T. A. Carlson

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Whether you are packaging liquid, powder, solids, or multiple items, the Bartelt Machine will handle your needs. Below are shown the packages of a few of the many nationally known manufacturers who use Bartelt.

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For your information

An international exposition to be called **Exposition on Basic Materials for Industry** and held at the Grand Central Palace, New York, June 15-19, 1953, has been announced by **Clapp & Poliak, Inc.**, New York. **Don G. Mitchell**, president of Sylvania Electric Products, Inc., is chairman of the board of sponsors, consisting of top executives from 20 major companies. More than 15,000 executives concerned with design and development of products, from every major manufacturing center in the world, are expected to attend, and 2,000 experts will be on hand to answer questions.

The **American Society for Testing Materials,** 1916 Race St., Philadelphia, has just published a 50-year author and subject index to the technical papers and reports dealing with materials, their properties and testing, appearing in ASTM publications from 1898 through 1950. This index deals basically with technical papers which have appeared in ASTM Bulletins, Proceedings, etc.

The **Canning Machinery & Suppliers Assn.'s** board of directors has announced plans for the 46th Annual Exhibit to be held at the Conrad Hilton Hotel, Chicago, Feb. 21-25, 1953. The exhibit will include a presentation of the latest techniques and a preview of the newest canning equipment and supplies. Tickets are available in limited quantity from the secretary-treasurer of the association, Lock Box 430, Battle Creek, Mich.

The midyear meeting of **The Fibre Drum Manufacturers Assn.** was held in New Orleans, Oct. 15-17. The business sessions were presided over by **C. E. Eggerss**, president of the association and vice president, Continental Can Co., Van Wert, Ohio. Included was a trip to Bogalusa where the drum manufacturers, as guests of the **Gaylord Container Corp.**, were conducted on a tour of the factory. **Vertrees Young** spoke on Gaylord's pulpwood operations.

The next meeting of the association will be held at the Drake Hotel, Chicago, April 16-17, 1953. Address the association at 100 E. 42 St., New York, N. Y.

Frank Christenson, president of the **Industrial Mineral Fiber Institute,** announced at the recent annual meeting that the primary objective of the association for the coming year will be to expand activities to parallel the rapidly growing uses of mineral fiber, including its use for packaging and cushioning. The membership voted to change the institute's name from Industrial Mineral Wool Institute to Industrial Mineral Fiber Institute.

Administration of the institute's broader activities and industry services will be handled from its New York offices through Mr. Christenson and **Harry E. Lewis**, executive director.

The **Folding Paper Box Assn. of America** was one of six associations cited for exceptional service to safety at a recent National Safety Congress and Exposition held in Chicago Oct. 20-24. **Ned H. Dearborn**, president of the National Safety Council, presented the new award to **A. E. Murphy**, executive director.

Eastman Kodak is offering a new Data Sheet which tabulates the properties of the various forms of Kodapak Sheet. Free copies may be obtained on request to the Cellulose Products Sales Div., Eastman Kodak Co., Rochester 4, N. Y.

The Bakelite Co., Div. of Union Carbide & Carbon Corp., has published the **"1953 Guide to Improve Packaging with Bakelite and Vinylite Plastics and Resins."** This handy 12-page reference pamphlet contains photographs illustrating packaging applications of polyethylene, styrene and phenolic plastics and resins. It may be obtained by writing to the company at 300 Madison Ave., New York 17.

The **Plant Maintenance Conference,** to be held Jan. 19-22 in Cleveland, will be jointly sponsored by the American Society of Mechanical Engineers and the Society for the Advancement of Management. Exhibits will cover some 7,000 different products. Talks, round-table discussions and a plant tour will be open to all visitors. Advance registration cards and hotel information may be obtained from **Clapp & Poliak, Inc.**, 341 Madison Ave., New York.

The Awards Competition Committee of the **Lithographers National Assn.** and the members of the association's Ways and Means Committee have made plans for the association's third Lithographic Awards Competition and Exhibit, to be held April 27 to May 9, 1953, in New York City. Entries, which come predominantly from advertisers and their agencies, will range from stamps to 24-sheet posters in 40 classifications produced in 1952.

The **Point-of-Purchase Advertising Institute** has announced the inauguration of a greatly expanded program of marketing research. According to **Howard M. Cowee,** chairman of the Research and Educational Committee, the new program was prompted by the interest of national advertisers in the series of "Fact Reports" which POPAI now issues.

The Ninth Annual Technical Conference of the **Society of Plastics Engineers, Inc.,** based on the theme, "Plastics—Engineered for Tomorrow," will be held at the Hotel Statler, Boston, Jan. 21-23, 1953.

On Oct. 24 a luncheon was held in Seattle to salute the 86-year growth of Washington's canning industry, the state's third largest manufacturing industry.

Gov. Arthur B. Langlie was presented with a plaque, in which was imbedded in a transparent block the 20 billionth can manufactured for Washington and Alaska food products, by **C. W. Roberts,** vice president of **American Can Co.'s Pacific Div. W. C. Stolk,** president, American Can Co.; Governor Langlie; and **Mayor Allen Pomeroy** of Seattle were speakers.

The Eleventh Annual Convention & Industrial Exhibit of the **National Barrel and Drum Assn.** was held in New York Oct. 16-18. More than 400 persons at-

What's Doing

Dec. 8-10—**American Pharmaceutical Mfrs. Assn.,** Waldorf Hotel, New York.

Dec. 8-11—**National Coffee Assn.,** Boca Raton, Fla.

Dec. 10-13—**Automotive Service Industries Show,** Atlantic City, N. J.

Dec. 10-13—**National Standard Parts Assn.,** Hotel Traymore, Atlantic City, N. J.

Dec. 11—**Society of Cosmetic Chemists,** Biltmore Hotel, New York.

Jan. 8-16—**Associated Glass & Pottery Mfrs.,** William Penn Hotel, Pittsburgh, Pa.

Jan. 10-14—**United States Brewers Foundation,** 77th Annual Convention, Waldorf-Astoria Hotel, New York.

Jan. 12-15—**A.M.A. General Management Conference,** Hotel Statler, Los Angeles.

Jan. 15—**Society of Chemical Industry, American Sec.,** Waldorf-Astoria Hotel, New York.

Jan. 15-22—**National Housewares & Home Appliance Exhibit,** Chicago, Ill.

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The many millions of valves in daily use, representing over one hundred completely satisfied customers in the United States and Canada, is your assurance that PRECISION has the answer to your aerosol program regardless of product or container.

We invite your inquiry to enable our staff of aerosol valve technicians to work cooperatively in satisfying your valve requirements.

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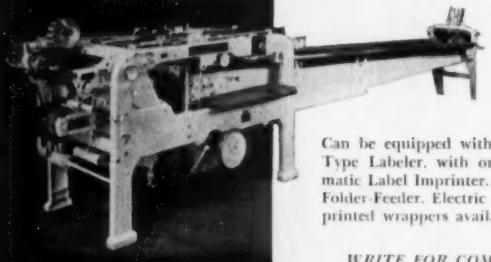
"OLIVER" Wrapping Machines

Wraps and labels a wide variety of products... baked goods, boxed candies, cut flowers, textiles, paper specialties, etc.

The "Oliver" is made in seven different models, each built to wrap rectangular and irregular shaped packages in an extensive range of sizes. Using cartons, trays, U-boards, cards, or without supports, it wraps packages in waxed paper, cellophane, glassine, and other heat-sealing wrappers. "Oliver" versatility will save you dollars daily. Adjust it for package size in a minute or two. Adjust wrapper cut-off length while machine is running.



Can be equipped with "Oliver" Roll-Type Labeler, with or without automatic Label Imprinter. Has Cardboard Folder-Feeder. Electric Eye register for printed wrappers available.

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REINFORCED CORNERS

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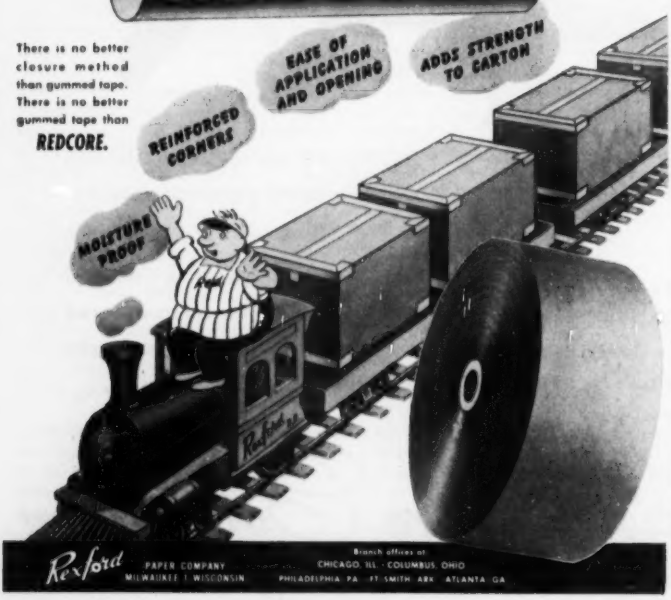

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For your information

tended. **Henry Hoke,** author and publisher, spoke at a luncheon meeting Oct. 16. According to **Morris Hershon,** association president, steel drum and wooden barrel reconditioners are expected to show a 20% increase in business in 1953 over 1952.

A brochure, produced by the **Bagpack Div., International Paper Co.,** said to contain all the information needed to specify the proper multiwall bag for a wide variety of products, is now available. Copies of Brochure No. B 45 may be obtained by writing to the Bagpak Division of the company at 220 E. 42 St., New York 17.

The annual convention of the **Gummed Industries Assn.** was held recently in White Sulphur Springs, W. Va. Re-elected for second terms were **Henry W. Stark, Jr.,** Rexford Paper Co., as president, and **Roth F. Herrlinger,** Gummed Products Co., as vice president. **Philip O. Deitsch** stays as managing director.

The **Label Mfrs. National Assn.,** at its recent annual meeting in Chicago, elected the following officers and directors: president—**Henry F. Scheetz, Jr.,** president, Fuller Label & Box Co.; vice president—**Robert A. Ritter,** president, Calvert Lithographing Co.; treasurer—**T. C. Nevins, Jr.,** vice president, Nevins-Church Press; directors for a three-year term—**Edward J. Epsen,** president, Epsen Lithographing Co.; **Wyvill Fitzhugh,** vice president, William W. Fitzhugh, Inc.; **George R. Langlois,** president, Muirson Label Co., Inc.; and **T. C. Nevins, Jr. Oscar Whitehouse** continues as executive director.

A new revised 4th edition of **"Technical Data on Plastics,"** published by the **Manufacturing Chemists' Assn.,** was announced by **Mahlon G. Milliken** of the Hercules Powder Co., chairman of the MCA committee which supervised the preparation of this edition. The 184-page book describes and catalogs properties of some 24 types of plastic materials.

The **American Society for Testing Materials** established the test methods used in most cases. The book may be obtained, at $2.50 a copy, from the Manufacturing Chemists' Assn., Inc., 246 Woodward Bldg., Washington 5, D. C.

Clapp & Poliak have announced the **5th National Materials Handling Exposition,** to be held May 18-23, 1953, at Convention Hall, Philadelphia, Pa.

Recipe for any successful package

Here's a package designed to catch the shopper's eye—and to hold it with the tested appeal of recipes that suggest uses of the product.

Such knowledge of what makes women want to buy is an important factor in planning any effective package—along with efficient package construction, and choice of the right film.

With over twenty-five years of packaging experience, Du Pont can help with all these essentials. Get in touch with your Du Pont representative. He'll help you choose the film best suited to your product, from the 115 varieties of three basic films—Cellophane, Polythene and Acetate—offered by Du Pont. Or, for full information, including the latest Du Pont surveys of consumer buying habits in your field, write to E. I. du Pont de Nemours & Co. (Inc.), Film Department, Wilmington 98, Del.

Only Du Pont gives you all these packaging aids:

1. WIDE VARIETY OF PACKAGING FILMS scientifically tailored to meet the needs of varied products and packages.
2. TECHNICAL assistance to help you plan the most practical and efficient construction of your package.
3. MERCHANDISING help, through continuing nationwide surveys of buying habits, to keep your package up to date.
4. NATIONAL ADVERTISING to continually strengthen consumer preference for your packaged products.

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PRODUCTS OF ALL TYPES

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Calling on us for the production of tissues and THIN papers for specific custom wrapping and packaging requirements is nothing new with us. Our experienced paper makers and technicians delight in meeting problems that seem tough — with THIN papers specially processed to more than fill the bill. Shawano boasts a complete line of *stock* tissues and thin papers too, so it's a safe bet that one way or another we can furnish the paper — *as you want it!* Drop a note or give us a call — we'd like to show you how Shawano papers can be *"tissue thin yet tensile tough".*

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Papers for business forms, stationery, advertising

Packaging food products—and thousands of other products of all kinds.

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CONVERTERS — Besides tissues, thin papers and lightweights, Shawano specializes in semi-creped base stocks for napkins and towel conversion.

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The exhibition will be sponsored by **Material Handling Institute.** Information may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Fred S. Hinkle, Benj. C. Betner Co., was elected president of the **National Flexible Packaging Assn.** at the annual meeting in Chicago. On the new board of directors are Mr. Hinkle, **A. E. Weisberg,** Comet Envelope & Paper Co., treasurer, and vice presidents **Theodore Isen,** Paramount Paper Products Co.; **Karl R. Hines, Jr.,** Nashua Corp.; and **Robert S. Jones,** The Dobeckmun Co. Group chairmen are: **W. L. Droege,** Moser Bag & Paper Co.; **J. F. Zorn,** Custom Made Paper Bag Co.; **H. E. Hallman,** Columbia Paper Products Corp.; **John Cozza,** Cello-Masters, Inc.; **H. N. Brush,** Munson Bag Co.; **Morrie Boas,** Flexible Package Co.; **Carl W. Huflage,** Midwest Foil Co.; and **M. P. Williams,** Cadillac Products, Inc. **James P. Duffy,** former president, and **Roy E. Hanson,** Milprint, Inc., remain ex-officio members.

F. S. Hinkle

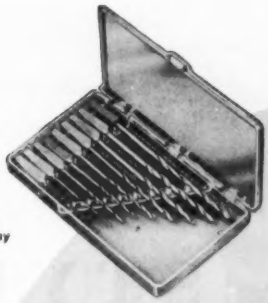
A 10-day **International Packaging Exhibition,** with packing material and machinery from 11 countries, was recently concluded in Gothenburg, Sweden.

England, Germany and Sweden were among those exhibiting developments in materials, equipment and methods.

The **National Wooden Box Assn.** has reprinted in booklet form a series of articles covering characteristics of principal wood species used in the manufacture of nailed wooden boxes and crates entitled, **"Principal Wood Species Used in the Manufacture of Nailed Wooden Boxes and Crates."** Copies may be obtained at 25¢ each from the National Wooden Box Assn., Barr Bldg., Washington 6, D. C.

The **National Canners Assn.** honored Nicolas Appert (1752-1841) as "The Father of Canning" during the week of Oct. 19 in commemoration of the 200th anniversary of his birth.

An engraved scroll was presented to Minister Plenipotentiary, Gontran de Juniac of the French Embassy, Washington, D. C., on Oct. 21 as the canners' expression of the world's debt to Appert. **Fred C. Heinz,** Pittsburgh, president of the National Canners Assn., was a speaker.

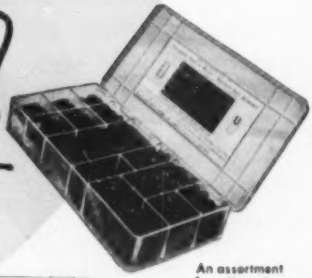


Bits sell better packaged this way

Handy reel repair box of parts

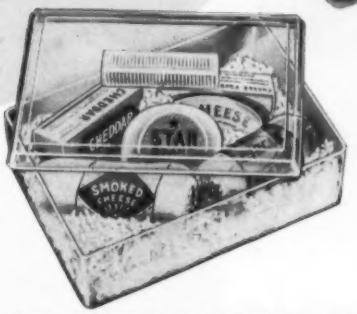
HAVE YOU A Package Problem?

For packaging an assortment of bead chains



An assortment of small products packaged for convenient use

First aid box for the home



Humidor box for cheese or other foods

Here are six packages selected from a large number showing how manufacturers of different products have successfully solved their packaging problems with attractive, durable Vlchek plastic boxes.

By a unique method, we can provide 548 compartment arrangements from 8 standard sizes. Thus, you can have unusual flexibility in packages to fit your products, yet—with stock-box economy.

In addition, specials—involving variations in color, shape, interior design, hinge design, etc.—can be engineered to meet specific needs.

Whatever your packaging requirements, our experienced designers can be of help to you. Your inquiry will receive our prompt attention.

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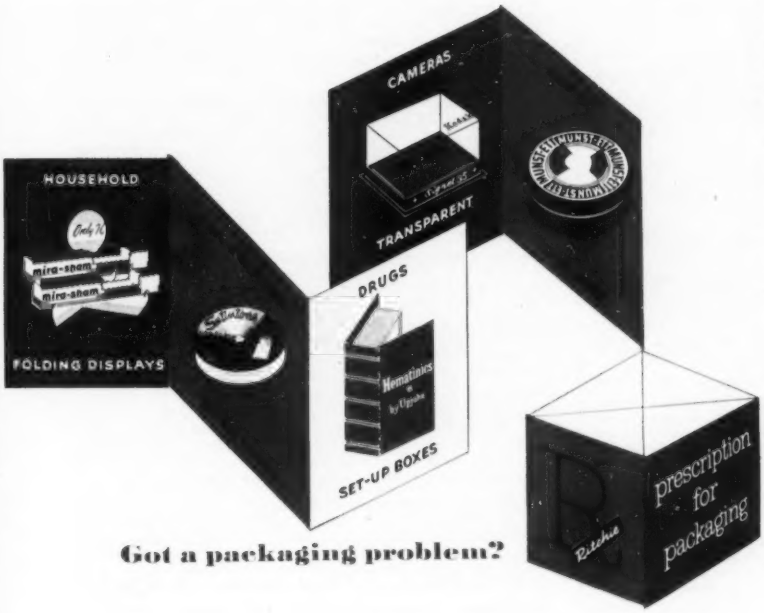
HIGH STYLE

send your product to market in an advance-styled Ritchie package and your own sales figures will prove it: high style is *buy* style!

IS BUY STYLE



You don't have to sacrifice a thing (not even economy) to achieve high style—*Ritchie style*—in your packaging. Our design department will help put your packages in the fashion forefront, yes—but they'll make them so they're *practical*, too. So they pack and stack and protect what's in them. *And so their cost is right.*

Got a packaging problem? refer it to Ritchie!

. . . and now Ritchie is high styling folding cartons

Yes, it's a new service at Ritchie—a special department to design folding cartons . . . up-to-the-minute facilities to manufacture them. For further information on this or any other Ritchie service, write today for the free booklet, "101 Ways to Get Better Packaging."

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U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Edited by H. A. Levey

Device for Making Tubes from Sheet Material, F. C. Worth, Ridgewood, N. Y. U. S. 2,610,556, Sept. 16. In a machine for forming tubes from sheets, an open-bottom magazine to hold a stack of sheets, at least one rail disposed below the open bottom of magazine to support sheets, means for reciprocating magazine and a rotary mandrel arranged in juxtaposition and having its axis transverse to the path of travel of the magazine and being equipped with a glue applicator.

Lipstick Container, J. J. Balasevick (to Scovill Mfg. Co., Waterbury, Conn.). U. S. 2,610,733, Sept. 16. A lipstick container of the swivel type comprising an exterior casing and an interior shell rotatably mounted in casing with an operable head formed as an integral part of said interior shell and located entirely outside of said casing.

Lipstick Holder and the Like, E. Noyack (to The Risdon Mfg. Co., Naugatuck, Conn.). U. S. 2,610,734, Sept. 16. In a holder for sticks, an outer shell having an opening at both ends and an internal projection at its lower end.

Dispensing Container Having an Absorbing Layer for Dispensing by Capillary Action, C. C. Goetz, New York, N. Y. U. S. 2,610,769, Sept. 16. A perfume dispenser comprising a rigid vial provided with a threaded and tapered outlet head having a small opening therein with cover threadably secured to vial thread and having a tapering cavity registering with vial head and having an absorbent disk at base and side walls of cavity forming an air-seal chamber around outlet head.

Measuring Dispenser, R. C. Penfield, Chicago, Ill. U. S. 2,610,770, Sept. 16. A measuring dispenser comprising a carton of sheet material and a relatively rotatable dispensing device formed integrally of the same sheet blank, carton having side and end walls, one of end walls having a partially weakened portion between it and the adjacent wall and having a fold line at the bottom of weakened portion, this weakened end being extended to provide the dispensing device which is foldable together to form an open container.

Hermetic Sealing Machine with Vacuum Control Means, F. Z. Fouse (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,610,779, Sept. 16. The combination of a hood for enclosing at least a portion of a container to form a chamber about the container to permit air to be withdrawn therefrom, an annular port in hood extending about the upper end of container through which air may be withdrawn to vacuumize the container, means in hood for applying a closure to container.

Box, H. L. Metzger, Castleton-on-Hudson, N. Y. U. S. 2,610,781, Sept. 16. A box comprising a cover element formed from an integral blank of paperboard and comprising a semicircular top, a straight side wall attached to the straight edge of top, a curved side wall attached at one end thereof to one end of straight wall and extending around curved edge of top.

Interlocking Sections for Paper Boxes, R. McReary, Corvallis, Ore. U. S. 2,610,782, Sept. 16. In a box construction having a pair of companion sections, each section having front and side walls, said walls of one section adapted to overlie the corresponding walls of the other section, respectively, when box is closed, a flap extending longitudinally from a wall of first-mentioned section at a corner, said flap terminating in a tongue, a second tongue formed in flap spaced longitudinally inwardly from first tongue and extending in a direction opposite to that of first tongue.

Self-Locking Box, T. Ochar, Little Falls, N. Y. U. S. 2,610,783, Sept. 16. A rectangular container comprising body and cover portions, each formed from a folded blank of sheet material and each having side and end panels, side and end panels of cover portion being constructed to fit over and surround those of body portion.

Tape-Dispensing Device, A. F. Tallman, Eugene, Ore. U. S. 2,611,432, Sept. 23. A tape dispenser comprising a tape container for housing a roll of tape, a tape-severing element presenting a cutting edge and pivotally mounted with respect to container for swinging movement from a tape-severing position.

Inspection Means for Sealed Packages, J. A. Sargent, Fort Belvoir, Va., and J. R. Wade, Jr., Alexandria, Va. U. S. 2,611,481, Sept. 23. Inspection apparatus for viewing the interior of hermetically sealed packages including a hermetically sealed waterproof and vaporproof barrier material and provided with an observation window in said material.

Dispensing Package for Interfolded Sheet Material, H. Nelson to International Cellucotton Products Co., Chicago, Ill.). U. S. 2,611,482, Sept. 23. A dispensing package of sheet material comprising a stack of interfolded sheets, said stack being doubled on itself about an axis paralleling the planes of the folds of the sheets and extending transversely of the fold-formed edges thereof.

Flexible Suture-Tube Package with Embedded Tear String, C. C. Adams (to Davis & Geck, Inc., Brooklyn, N. Y.). U. S. 2,611,483, Sept. 23. A sealed suture tube within an inner-sealed, flexible, translucent envelope of thermoplastic, heat-sealable resin composition, an outer envelope enclosing inner envelope, sterilizing liquid in each envelope, a strip of thermoplastic, heat-sealable resin composition sealed to outer envelope around its outer periphery, a tear string between outer envelope and strip and embedded in each.

Double Container, M. E. Mayer (to Joseph Solomon, New York, N. Y.). U. S. 2,611,499, Sept. 23. A transparent receptacle for a plurality of substances comprising a partition extending in substantially horizontal direction across the interior of receptacle, dividing receptacle into two compartments, partition including at least two recesses, recesses being directed in opposed relationship to each other and disposed to extend approximately in the center of partition.

Apparatus for Filling Ampoules, H. E. Taylor (to Baltimore Biological Laboratory, Baltimore, Md.). U. S. 2,611,524, Sept. 23. Automatic ampoule-filling apparatus comprising a drive shaft, a transmission actuated by drive shaft, ampoule-filling assembly actuated by drive shaft and means adapted to supply ampoule-filling assembly with measured amounts of fluid.

Mechanism for Charging Containers, R. Spurr (to Ex-Cell-O Corp., Detroit, Mich.). U. S. 2,611,525, Sept. 23. Liquid measuring mechanism comprising a chamber having an upper outlet, a tube extending downwardly therefrom through which liquid may escape, said tube having an inlet port formed in the wall thereof through which liquid may enter to fill the chamber.

Heavy-Duty Shipping Container, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,611,526, Sept. 26. A relatively tall collapsible shipping carton comprising a one-piece tubular rectangularly shaped body section, a one-piece outer rectangularly shaped tubular sleeve complemental in shape with and of less length than the body section and having end edges in a single plane terminating substantially equidistant inwardly from opposite end portions of body section.

Shipping Carton with Hand-Hole Reinforcing and Flap-Securing Clip, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,611,530, Sept. 23. A wall of fiberboard or like bendable and compressible material having an elongated hand-hole therethrough, said wall having a reinforcing wall part associated therewith.

Two-Lamp Wrapper, G. A. Conkle (to General Electric Co., a corporation of New York). U. S. 2,611,531, Sept. 23. A wrapper for pear-shaped incandescent lamps comprising an elongated sleeve having substantially the same lateral dimensions as a sleeve designed to receive and grip but a single one of the lamps of the size for which the wrapper is designed and comprising also a longitudinal partition of flexible material.

Package and Storage of Apples, H. H. Plagge (one-half to Iowa State College Research Foundation, Inc., and one-half to The Goodyear Tire & Rubber Co.). U. S. 2,611,709, Sept. 23. A gas-permeable storage container having unwrapped apples therein and provided with a tight liner of rubber hydrochloride

U.S. patents digest

film no more than 0.0012 in. thick and containing 15 parts of methoxyethyl oleate and 15 parts of dibutyl sebacate per 100 parts of rubber hydrochloride.

Cap-Making Machine, W. J. Keith (to Keith-Peabody, Inc., Brookline, Mass.). U. S. 2,612,084, Sept. 30. In a cap-making machine, the combination of a forming roll having a circumferential groove in the periphery thereof and adapted to receive a strip of material wound in multiple convolutions on the periphery of the roll and means having a portion thereon arranged to interfit in complementary relation with said groove for embossing the strip of material in each layer thereof as applied to the roll to form securing means on the inner surface thereof.

Cellular Carton-Erecting Machine, H. R. Houtman (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,612,086, Sept. 30. The combination of a base, a carton-support member swingably mounted on base and adapted to receive partially erected carton in inverted position, partition-erecting fingers pivotally mounted on support member.

Machine for Erecting Cartons, F. M. Willbrandt (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,612,087, Sept. 30. In a machine for erecting cartons having a bottom and side and end walls hingedly connected to the bottom, side walls having inwardly inclined slits opening at their end edges providing deflectable portions above the slits, end walls having corner flaps adapted to enter slits and provided with tongues engagable with deflectable portions, comprising a bed having an opening therein, a carton bottom support approximating but of somewhat less dimensions than the bottom of the carton to be erected mounted within bed opening in spaced relation to the edges thereof.

Closure-Flap-Folding and Envelope-Stacking Mechanism for Envelope Machines, V. E. Heywood (to United States Envelope Co., Springfield, Mass.). U. S. 2,612,088, Sept. 30. In mechanism for folding the extended seal or closure flaps of envelopes, the combination with means for advancing successive envelopes flatwise in a substantially horizontal path.

Machine for Counting and Stacking Articles, R. E. J. Nordquist (to American Can Co., New York, N. Y.). U. S. 2,612,089, Sept. 30. In a counting and stacking machine, the combination of means for feeding articles to a stack of such articles and a counter arranged to count a predetermined number of articles as they are added to the stack to form a batch.

Suppository Package, M. W. Percopo (to E. R. Squibb & Sons, New York, N. Y.). U. S. 2,612,261, Sept. 30. A package of substantially coniform suppositories or the like, composed of a dispensing mold, comprising a plurality of substantially impervious flexible material joined together at their bases.

Container, A. P. Klasing and B. W. Williams (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,612,305, Sept. 30. A wall for a container comprising a main body portion having an upper folded marginal flap including a rebent portion folded therefrom, the marginal flap defining an upper marginal edge, the rebent portion engaging the inner side of the marginal flap and an adjacent upper end portion of the wall; the flap, rebent portion and end portion of wall being in substantial parallelism.

Carton, R. C. Potts, Takoma Park, D. C. U. S. 2,612,308, Sept. 30. In combination with the wall of a container having a slotted aperture therein, a preformed unitary combination fastener and handle member formed of wire and adapted to be inserted in part through said aperture, said inserted part being U-shaped and formed to lie in part upon the surface of wall and part inclined at an angle thereto.

Package-Forming Machine, F. E. Bickford, Rye, N. Y. U. S. 2,612,822, Oct. 7. A device for forming reinforcing tray-like members and applying said members to a sheet of cellulose acetate or the like, having a molding chamber comprising a removable bottom element and upstanding side and end elements with plunger adapted to be lowered into molding chamber.

Carton and Erecting Machine, R. O. Woelfer (to Container Equipment Corp., Newark, N. J.). U. S. 2,612,823, Oct. 7. In a carton-closing and sealing machine having track means to support cartons moved through the machine and continuously running conveyer for propelling the cartons along track means, means for supplying collapsed cartons to the machine comprising

for best marking results use

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METHODS

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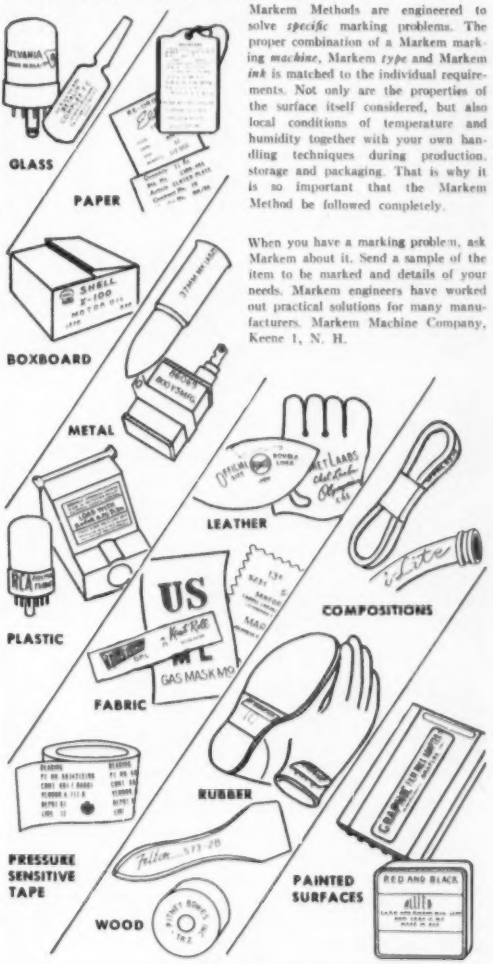
FOR MARKING PRODUCTS, PARTS, PACKAGES, TAPES, TAGS, LABELS



Markem Methods are engineered to solve *specific* marking problems. The proper combination of a Markem marking *machine*, Markem *type* and Markem *ink* is matched to the individual requirements. Not only are the properties of the surface itself considered, but also local conditions of temperature and humidity together with your own handling techniques during production, storage and packaging. That is why it is so important that the Markem Method be followed completely.

When you have a marking problem, ask Markem about it. Send a sample of the item to be marked and details of your needs. Markem engineers have worked out practical solutions for many manufacturers. Markem Machine Company, Keene 1, N. H.

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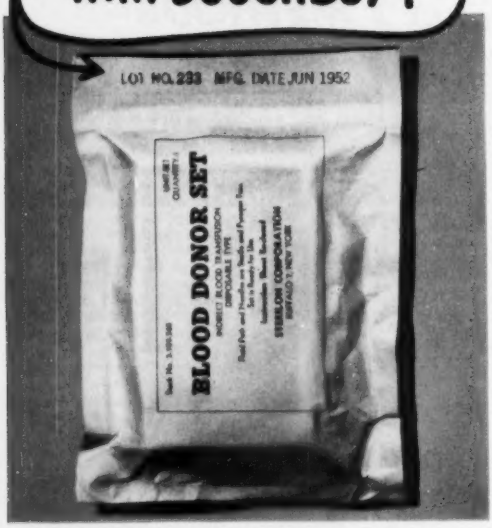
Heat seal and code in one operation with DOUGHBOY!



STERILON CORPORATION of Buffalo, N. Y., uses DOUGHBOY equipment for sealing and coding foil bags containing blood donor kits.

THE DOUGHBOY ROTARY CODE SEALER combines super-speed (up to 900 inches per minute) with versatile output. It handles materials ranging from heavy laminates (required to meet current rigid MILITARY and NAVAL packaging specifications) to such lighter materials as glassine, cellophane and wax type bags. In addition to the code-dater attachment, this machine is available with compression section and hole punch device.

Further details gladly furnished on request to

DOUGHBOY INDUSTRIES, INC.

Mechanical Division • New Richmond, Wisconsin

U. S. patents digest

a magazine mounted adjacent to the receiving end of track to hold a stack of collapsed cartons.

Method and Apparatus for Activating Labels, G. W. von Hofe, (to New Jersey Machine Corp., Hoboken, N. J.). U. S. 2,613,007, Oct. 7. In a labeling machine, a support for a source of supply of labels coated with thermo-activatible adhesive and means spaced from said source for supporting articles to be labeled.

Labeling Apparatus, C. Ouellete (to Wrap-King Corp., West Springfield, Mass.). U. S. 2,613,008, Oct. 7. Unitary self-contained apparatus for applying labels adapted for securement to a conveyor for conveying successive objects comprising rods extending vertically upwardly from said conveyor and having a chute for a vertical stack of horizontally superposed labels.

Carton-Packing Apparatus, L. H. Bowes (to Morton Salt Co., Chicago, Ill.). U. S. 2,613,021, Oct. 7. In carton-packing apparatus, a feed platform, means for delivering package units to platform transversely thereof and determining successive series of predetermined numbers of said units for arranging series in predetermined multiples constituting a group and moving the resultant group of units on said platform lengthwise thereof.

Apparatus for Sealing Valved Bags, W. R. Peterson and C. H. Hartman (to St. Regis Paper Co., New York, N. Y., a corporation of New York). U. S. 2,613,022, Oct. 7. An apparatus for filling valve bags and sealing the valves thereof, such valves being of a type bearing heat-sensitive adhesive on opposed wall portions which are adapted to be brought together and adhered to seal the valve, a valve-bag filling spout and means adjacent and connected to said spout for urging material therethrough and means for holding a bag in filling relation with said spout.

Method of Filling Pressure-Tight Containers with a Liquid Product and a Volatile Propellant, I. Reich (to Carter Products, Inc., New York, N. Y.). U. S. 2,613,023, Oct. 7. The method of packaging in a pressure-tight container a composition comprising a liquid product and a volatile propellant in liquid phase which comprises substantially completely displacing air from the container with a gas soluble in the composition.

Collapsible Cellular Carton, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,613,024, Oct. 7. In a cellular carton, spaced walls, one of said walls constituting a front wall, a bottom member hingedly joined to said walls, a top member hingedly connected to said walls and having a sealing flap integral therewith secured to inner side of front wall.

Package for Frozen Foods and the Like, W. A. Ringler (to The Gardner Board & Carton Co., a corporation of Ohio). U. S. 2,613,025, Oct. 7. A boxboard blank consisting only of a front wall, a bottom wall, a rear wall and a top wall in articulation in the order named, end walls articulated to opposite end edges of a bottom wall and a sheet of thinner flexible material in adhesive union with said blank.

Bag-Filling Machine, N. E. Dorrington, J. A. Kyker and W. R. Peterson (to St. Regis Paper Co., New York, N. Y.). U. S. 2,613,053, Oct. 7. In a bag-filling apparatus, a filling spout, a clamp movable from open position to closed position to secure bag to filling spout and weighing mechanism for periodically weighing charges of material.

Blade-Dispensing Magazine, N. Testi (to The Gillette Co., Boston, Mass.). U. S. 2,613,806, Oct. 14. In a magazine for dispensing thin flexible blades, stack-locating means for holding a stack of such blades in a predetermined position in said magazine and having reciprocable blade-advancing means.

Carton, H. W. Darr, Minneapolis, Minn. U. S. 2,613,867, Oct. 14. A carton made from a blank of material including side and end-wall sections and top and bottom closures, top closure including a pair of end flaps and a pair of side flaps, one of which pairs overlies the other of said pairs in opposed relationship, each of said overlying flaps being partially severed in generally U-shaped design to provide cooperating handle-forming blanks which are adapted to open toward each other.

Packaging, J. Schindler, Brooklyn, N. Y. U. S. 2,613,991, Oct. 14. In a package, an elongated non-metallic casing having a plurality of articles spaced apart from each other therein, adhesive means provided in certain areas of package, at least one longitudinal edge of package being bounded by co-extensive longitudinal areas cemented together with said adhesive means.

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Aerosol boom

(*This article continued from page 97*)
sol, now come with a ribbed plastic cap, shaped to the contours of the upright valve, which is threaded to the base of the valve stem to give an airtight fit.

Currently popular as a cover for certain types of valves is a dome-shaped molded cap with two "ears" for easy removal. This can be made either of polyethylene or rigid plastic; it can also be made transparent. Bridgeport Brass' Bug Bomb uses a simple, lightweight, transparent plastic housing which just covers the valve itself and is stuck to the can top by a bit of rubber cement.

All these valve covers answer one of the two principal problems in the handling and shipping of aerosols—the protection of the valve against accidental discharge—but not all meet the second problem, that of providing a flat top surface for easy stacking. The type of can with a concave top bringing the valve stem below the level of the rim minimizes this latter problem, but even here a metal or plastic slip-on guard is frequently applied to the stem, and in some cases a flat, flush, false top of metal or paperboard has been applied just to make stacking easier.

One of the most effective solutions to the display and stacking problem is that of Cook Chemical Co.'s Real-Kill Insect Bomb, which has been provided with an inverse-tapered, molded transparent polystyrene slip cover that gives an absolutely flat top surface with a diameter just slightly under that of the beaded can base. When these cans are stacked one on another, the base of one snugly fits the cap of the one below, giving a non-slip stack. Such stacking facility is particularly important for supermarket display and may be welcomed even by the corner drugstore.

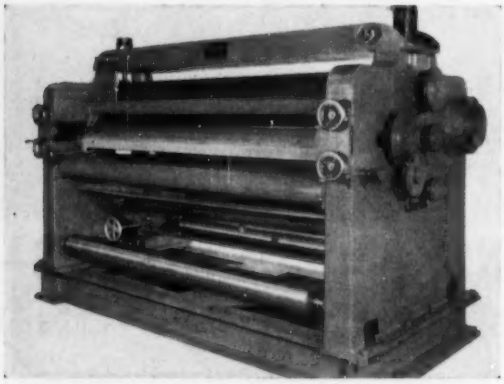
Custom loading

Because of the specialized knowledge and facilities required, pressure packaging has developed largely as a custom proposition, with about 20 firms now offering complete contract loading service. Most of these firms market no products of their own, specializing entirely in the loading of completely formulated products shipped to them in bulk.

As the contents of an aerosol package may be 80% head space and propellant by volume, economies may be realized by shipping the compact active ingredients of the product to one or more custom loaders located close to major market areas.

A volume of a million packages a year is often mentioned as the point at which it is economical for a product manufacturer to set up his own pressure-packaging line, but this is admittedly a rule-of-thumb figure because so many variables are involved. Loaders are usually equipped for both refrigerated and pressure loading and have created a variety of special techniques and equipment. They also have their own research and testing laboratories, in close touch with latest developments by container, valve and propellant suppliers.

Not to represent the custom loader as the repository of all wisdom in aerosol packaging, however, it should be pointed out that suppliers of containers, propellants and valves all maintain trained staffs and research laboratories for the assistance of packagers and would-be packagers. They also make available excellent technical and merchandising knowl-



Model CC—Contracoater*, reverse roll coating machine for coating of lacquers, resins, organisols, on paper, foil, fabric and film.

Model C-66—Applicator for starch, wax and asphalt laminating.

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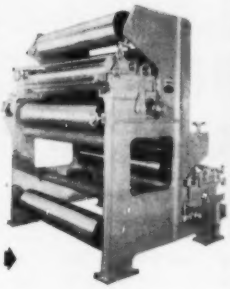

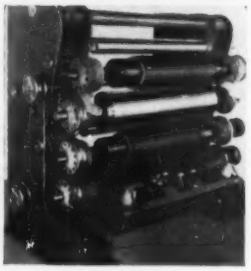

Model 4-CL—open side coater-laminator for gravure, offset, reverse, kiss or squeeze coating, laminating and foil mounting.

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edge. Because in-use performance of any single supplier's product in its finished form is intimately related to that of all other components, consultation with any single supplier usually produces well-rounded data.

REFERENCES: See the 1953 *Modern Packaging Encyclopedia* for names of suppliers of aerosol containers (p. 669—Cans, Metal, Pressurized Dispensing); valves (p. 660), and custom loaders (p. 693—Contract Packaging). For further information see the section "Pressurized Containers" starting on p. 238 of the same volume.

Prince Matchabelli

(This article continued from page 109)
and was later classified among the 10 top symphony programs.

The merchandising program that accompanied the promotion made Stradivari perfume the company's leading brand almost immediately.

More showmanship, resulting in even greater popularity for the famous crown bottles and all other products bearing the crown trademark, was the opening of the spectacular Crown Room at 711 Fifth Avenue in the fall of 1946 to introduce the company's "Crown Jewel" perfume and to celebrate the 20th anniversary of the founding of the Prince Matchabelli company. William Pahlmann, one of the country's leading designers of interiors, was commissioned to create "the finest business showroom in the world." It is doubtful whether the Prince in this lifetime ever saw anything more sumptuous than the room designed as a setting for the products that bear his name.

The crown motif rules this 60-foot, two-story room. It is worked into furnishings and decorations—even to the design of the balconies, the chandeliers and the stained glass crowns set in the massive windows that face Fifth Avenue. After its gala opening, thousands visited the room. It became famed around the world, one visitor from Hawaii saying she was told there were four sights she must see in New York—the Empire State Building, Rockefeller Center, the Statue of Liberty and the Crown Room. Fifth Avenue bus passengers craned their necks to peer in. The Crown Room was used for charitable social events, the company making the room available free of charge. And it has been visited by hundreds of celebrities, stage and movie stars, and diplomats. Although con-

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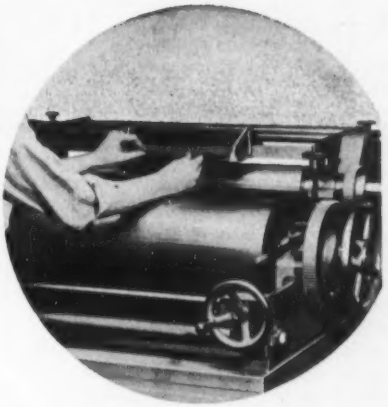

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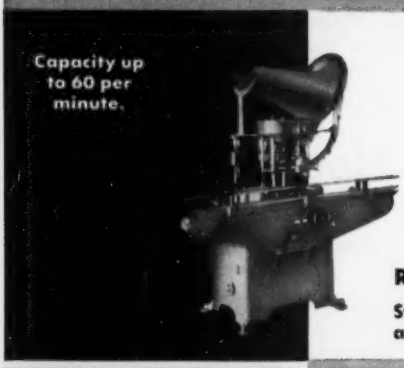

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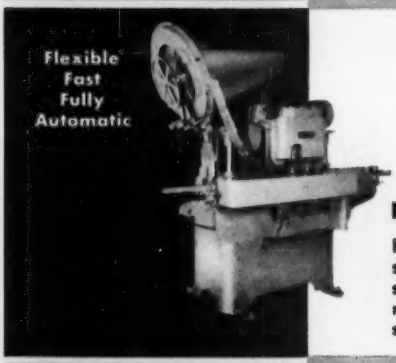
RESINA

Standard, single head, automatic screw capper.



Tops them all

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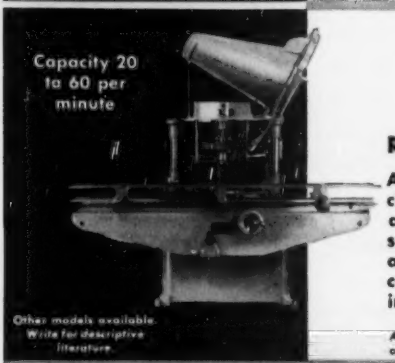
High speed, straight line screw capper. Rated for speeds up to 300 per minute depending on size of container.



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tinued expansion has since necessitated using a part of the Crown Room temporarily for office space, its decor has been preserved. In its promotional phase it symbolized the grandeur of Prince Matchabelli promotional methods. It provided the ultimate in cosmetic glamour. The product, too, has been consistently backed by all-out publicity, by generous use of impressive advertising in class magazines, by an aggressive sales force with down-to-earth adherence to proven cosmetic selling techniques, and by the company's own demonstrators in stores.

Prince Matchabelli's current enviable sales records, the company believes, are the result of its extensive, neatly wrapped-up, point-of-sale program.

This involves the company's own working plan for year-round and seasonal promotions through its distributing outlets in a manner that has been found to be most effective in operation over a period of several years.

The basic instrument for the growth of this world-wide business, of course, is a package—the gold-decorated crown bottle that puts a royal crest within the reach of almost every woman of today.

CREDITS *(Principal suppliers of current packages illustrated)*: ***Glass containers***—*T. C. Wheaton Co., Millville, N. J.; Kimble Glass, Div. Owens-Illinois Glass Co., Box 1035, Toledo 1, Ohio; Carr-Lowrey Glass Co., 2201 Kloman St., Baltimore 30, Md.* ***Closures***—*Chase Brass & Copper Co., Inc., 1949 Rodney St., Waterbury 20, Conn.; Brass Goods Mfg. Co., Deep River, Conn.; Mack Molding Co., 160 Main St., Wayne, N. J.* ***Boxes***—*The Warner Bros. Co., 325 Lafayette St., Bridgeport 1, Conn.; Shoup-Owens, Inc., 1100 Adams St., Hoboken, N. J.; F. N. Burt Co., Inc., 514 Seneca St., Buffalo 4, N. Y. Box covering material ("Beloved") Facile Corp., 200 Fifth Ave., New York.* ***Compact and automatic lipstick***—*Bridgeport Metal Goods Mfg. Co., 1200 Cherry St., Bridgeport, Conn.* ***Labels***—*Richard M. Krause, Inc., 52 E. 19th St., New York 3.* ***Acrylic package***—*Industrial Conversions, Inc., 58–84 Maspeth Ave., Maspeth 78, N. Y.* ***Liquid filler***—*MRM Co., Inc., 191 Berry St., Brooklyn 11, New York.* ***Auger filler for powders,*** *Stokes & Smith Co., Sub. Food Machinery & Chemical Corp., Frankford, Philadelphia 24, Pa.* ***Capper for miniature crowns***—*Kinex Corp., Needham, Mass.*

Labeler—*New Jersey Machine Corp., 16th St. and Willow Ave., Hoboken, N. J.*

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Vacuum sealing

(This article continued from page 152)

main motionless on a "dead plate" until pushed forward by a carton being positioned under the first suction head. A carton entering under the first suction head could not possibly push the other cartons with the vacuum on, but this could be overcome by having the carton trip a microswitch located just before the first suction head. The microswitch would activate a three-way solenoid valve that would shut off the vacuum and allow atmospheric air to enter the suction head. This would immediately relieve the pressure on all the cartons and they could be pushed forward without difficulty (see Fig. 7). As soon as the carton had been positioned under the first suction head it would release the pressure on the microswitch and the vacuum would be turned on again.

This method has the advantage of being applicable to machinery which handles cartons in the upright position or machinery which handles cartons in the horizontal position. On the latter type of equipment the vacuum-sealing method could be applied to both ends of the carton simultaneously.

3. Still another method would be to connect a heating element to the suction head for the purpose of heat sealing the cartons, which would have a thermoplastic material preapplied to the flaps.

The concept of carton sealing by vacuum is relatively new and may appear to be a radical departure from the present methods, but it definitely provides a means of solving the universal problem of top sealing a seal-end carton. The important benefits to be derived from the use of this method are as follows:

1. It provides the only possible means of exerting pressure on both sides of the flaps being sealed.

2. It shortens the time necessary to form a seal.

3. It will shorten the length of conveyer belts needed to form the final seal.

4. It requires no change in the general design of the present seal-end carton and it does not require additional board.

5. It does not make obsolete the equipment presently used for filling and sealing.

6. It can reduce costs by eliminat-

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ing, where practical, the inner liner and outer wrapper.

7. It helps to prevent the entrance of extraneous materials and insects.

8. It can render every seal-end carton, for all practical purposes, siftproof.

9. It opens the possibility of using thermoplastic sealing compounds instead of the present adhesives.

How VCI cuts costs

(*This article continued from page 117*)

tened to cartons and boxes, the labels are further protected by strips of transparent pressure-sensitive tape when parts are for military orders. Smaller parts are packed in bright yellow boxes with a repetitive pattern of a Diesel-powered train and the notation, "Genuine G. M. Parts." On some types of packages, gummed tape with a similar printed pattern is used.

For export shipment, many of the parts receive the added protection of a heat-sealed cloth and foil wrap or bag. Combination of the volatile corrosion inhibitor and the sealed bag provides the ultimate in moisture protection for highly finished metal parts as well as for such products as cork gaskets, which change dimensions and become unusable if permitted to absorb moisture. How Electro-Motive uses a combination of VCI paper and a heat-sealed barrier material for export packs of bearing races is shown in an accompanying series of photos. Another photograph illustrates the use of the volatile corrosion inhibitor in the packing of such parts as valves, nuts and bolts.

SOURCES OF SUPPLY: *Among the volatile corrosion-inhibitive materials are "Vapor Wrapper" (sodium nitrite urea), produced by the Nox-Rust Chemical Corp., 2429 S. Halstead St., Chicago 8, and "VPI" (dicyclohexyl-ammonium nitrite), licensed by the Shell Development Corp., 50 W. 50th St., New York 20. Shell converter-licensees include American Reenforced Paper Co., 55 Starkey Ave., Attleboro, Mass.; Angier Corp., Framingham, Mass.; Excello Paper Products Co., 3351 Madison Rd., Oakley, Cincinnati 9, Ohio; The Hinde & Dauch Paper Co., Sandusky, Ohio; The Marvellum Co., Holyoke, Mass.; The Miami Valley Coated Paper Co., Franklin, Ohio; Orchard Paper Co., 3914–24 N. Union Blvd., St. Louis, Mo.; The Sisalkraft Co., 205 W. Wacker Dr., Chicago 6, Ill.; Canada Glazed Papers, Ltd., 45 McMurrich St., Toronto 5.*

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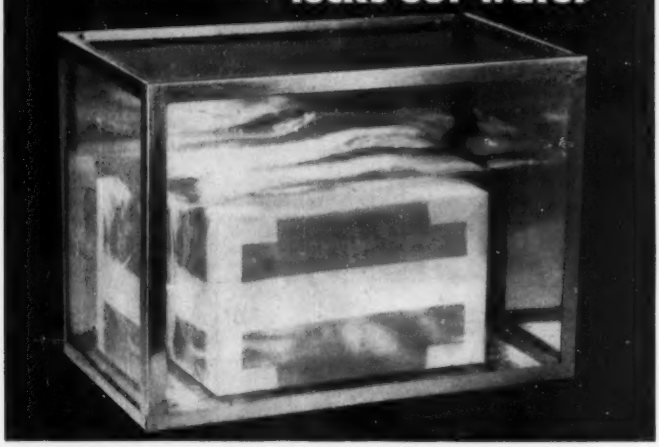

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Multi-flavor filler

(*This article continued from page 123*)

the start of the packaging line. The pallet loads are pushed forward by a worker as needed. Thus it is not necessary to call for an automatic transporter every time a pallet load of bottles is needed.

Another work-saving device is a tilt plate installed on the bottle unscrambler. Cases of empty bottles are partially inverted and placed against the hinged tilt plate and the worker does not have to turn the case completely upside down to empty out the bottles.

An interesting cost-saving method employed in the Garrett plant involves the packing of filled regular ⅕-quart bottles upside down in top-sealed shipping cases. This makes it possible to insert an extra corrugated-board bottom, as required for rail shipments. The extra piece is omitted from local shipments and, since the pieces of corrugated board cost nearly two-thirds of a cent each, worthwhile annual savings are claimed.

Complex handling and shipping problems are solved by a two-level conveyor that completely circles shipping and storage areas. The shipment of wines is naturally complicated because of the many and varying state regulations, which mean that every shipment must be specially made up. Garrett's dual-level merry-go-round-type conveyor has proved especially effective, since it enables workers to feed in and take off cases at numerous points in the shipping room and thus numerous shipments can be handled concurrently on the busy conveyor lines.

Recently the Garrett company produced its 100-millionth bottle since repeal and a gold bottle was designed to commemorate the achievement. Replicas of this bottle—glass with sprayed-on silver undercoat and a gold surface coating—are sent to dealers for display and promotion use. One gold bottle is packed in approximately every 25th shipping case.

CREDITS: *Bottles—Thatcher Glass Mfg. Co., Inc., Elmira, N. Y., and Armstrong Cork Co., Liberty St., Lancaster, Pa. Caps—Armstrong Cork Co.; Crown Cork & Seal Co., Eastern Ave. & Kresson St., Baltimore 24, Md.; Empire Can Corp., 228 Ashford St., Brooklyn 7, and*

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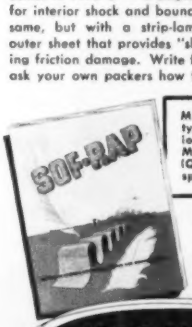
- Safely protects your products

Leading manufacturers the country over are switching to low cost, *better protecting* SOF-RAP. Light in weight, complete flexibility and ease of handling means increased wrapping production — in some cases as much as *two to one!* Your men like it because it's soft and easy on the hands — contains no sharp silicates to cut or bruise. SOF-RAP comes in TYPE C — a single-ply krinkled cushion for interior shock and bounce and TYPE B — the same, but with a strip-laminated, tough kraft outer sheet that provides "slippage" for preventing friction damage. Write for test samples, then ask your own packers how they like it!



Meets requirements type I, II and III cushioning materials under MIL — C — 11791 (QMC) and Army-Navy specs. Jan — P 100

Get this HELPFUL free book + samples

NICHOLS
PAPER PRODUCTS COMPANY
GREEN BAY, WISCONSIN

Phoenix Metal Cap Co., 2444 W. 16th St., Chicago 8. **Labels**—*David Weil's Sons Lithographic Co., 315 Berry St., Brooklyn 11.* **Shrink-on seals**—*The Celon Co., 2034 Pennsylvania Ave., Madison, Wis.* **Display carton**—*Robertson Paper Box Co., Inc., Montville, Conn.* **Capping Machine**—*Pneumatic Scale Corp., Ltd., 77 Newport Ave., Quincy 71, Mass.* **Labeler**—*Pneumatic Scale Corp.* **Case sealers**—*Standard-Knapp Div. of Emhart Mfg. Co., Main St., Portland, Conn.* **Replica gold bottles**—*Le Blume Co., 1938 Park Ave., New York.*

Decals—

(*This article continued from page 103*) continue to be left in place until just before bottles enter the cartoner and at that point a jet of air is expected to suffice to whisk the dry carrier papers from the moving bottles.

Also in view is further conversion of the semi-automatic type of labeler to permit fully automatic operation. This may be done with accessories which will take a bottle from the moving line, tip it onto the labeling cradle and then return it to the line, and eventually such a modified machine may serve as the prototype of a fully automatic machine primarily designed for decal-transfer operation, if widespread use of the technique makes production of such equipment worth while.

All concerned with the Kidmetics pilot operation, however, warn that fully automatic machinery is well in the future. Associated's anticipated need for a production increase to 200, 250 and eventually 300 gross a day output is expected to be met first by simple doubling-up on the present type of converted labeling equipment. This will be quite practical, it is explained, because of the simplicity and economy of the equipment required. The conversion change parts, while not of the type intended for frequent removal and replacement, represent only a small percentage of machine cost and can be removed to permit use of the machine in its original form again.

CREDITS: *"Kwik-Strip" decalcomanias and solvent, The Meyercord Co., 5323 W. Lake St., Chicago 44. Labeling machinery, New Jersey Machine Corp., 16th St., and Willow Ave., Hoboken, N. J. Bottles, Hazel-Atlas Glass Co., Wheeling, W. Va. Folding display cartons, Modern Folding Carton Corp., 102 Kane St., Brooklyn 2, N. Y.*

perforations for particular packagers

Roto Bag

NOW OFFERS A CHOICE OF ATTACHMENTS FOR AUTOMATICALLY PERFORATING BAGS

Differing ventilation problems require different solutions. Roto Bag believes that this choice of perforations will answer your special requirements. Both perforating units are standard accessories to all Roto Bag machines. These devices do not complicate or reduce regular bag production.

CIRCULAR PERFORATION

Two longitudinal rows of holes whose number may be varied and which may be placed laterally as desired. Excellent for all packaging materials.

PARALLEL VENTS PERFORATION

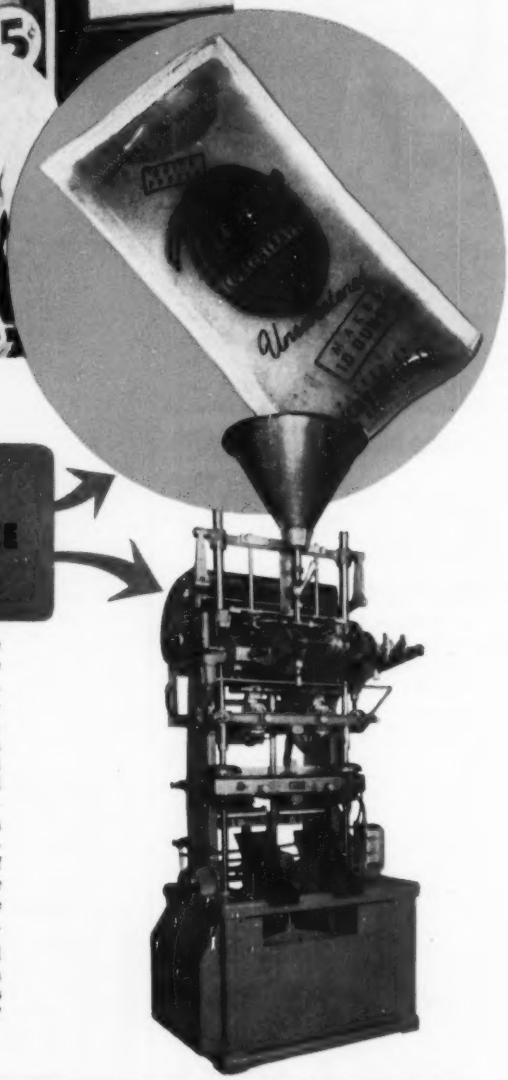
Length of vent can be altered to suit. Perforation intervals and lateral placement are adjustable. This type adaptable for Polyethylene and Pliofilm only.

FOR SAMPLE PERFORATIONS WRITE:

Roto Bag MACHINE CORP.
130 EAST 13th STREET, NEW YORK 3

ASK FOR SPECIFICATIONS OF OUR FAMOUS BAGMAKING MACHINES.

Photos Courtesy Modern Packaging



STOKESWRAP

Packaging ORANGE JUICE AND OTHER LIQUIDS

It's easy—fast—and economical . . . when you use the ever-versatile Stokeswrap! For example, the 2½ oz. package of concentrated orange juice, shown here in colored circle, is made with Polyethylene on the inside, Cellophane on the outside. The Stokeswrap takes this laminated film from a roll, forms the bags around forming tubes, and fills each bag with the required amount of liquid from a specially designed *adjustable piston filler—without spilling a drop.* Sides and ends of each package are heat-sealed, making a tight, non-leaking bag. *The complete operation, from roll to finished package, is fully automatic . . . and requires only one attendant to produce 6000 packages per hour!* These packages are then quick-frozen until ready to use.

Here's a new method to package your liquid products . . . and a new merchandising medium that should help stimulate the sales of your liquids or creams. Why not investigate its possibilities? Write today.

S&S

PACKAGING & SET-UP PAPER BOX MAKING EQUIPMENT

STOKES & SMITH CO.

FRANKFORD, PHILADELPHIA 24, PENNA.

Pacific Coast: SIMPLEX PACKAGING MACHINERY INC. 534-33rd AVE., OAKLAND 6, CALIF.

SUBSIDIARY OF FOOD MACHINERY AND CHEMICAL CORPORATION

fmc

Canadian show

A three-day Canadian National Packaging Exposition was recently held in Toronto. The first of its kind to be held in Canada, the exposition was visited by a total of 9,200 packaging experts from Canada and the United States. A spot survey showed that the majority of exhibitors would participate at the second Canadian National Packaging Exposition which is planned for the same period in 1953. Charles Cornell, secretary of the Packaging Assn. of Canada, reported that "some 60% of the companies have indicated they wish to increase space next year."

F. C. Lennox

Visitors from the United States were interested to see that Canadian packaging experts have been able to find methods of solving cold-weather shipping and packing problems through practical experience.

The first all-Canadian competitions to stimulate package design were also held in conjunction with the Exposition. Two competitions, one in the consumer packaging field and the other in the industrial container field, attracted over 300 entries. First prize, the Gold Award, in the Consumer Package Competition went to Reliance Petroleum Ltd., London, Ont., for their new five-gallon motor oil can and first place, in the Industrial Container Competition, went to Grant & Sons, Vancouver, B.C., for a corrugated tomato carton.

The following officers and executive committee of the Packaging Assn. of Canada were elected at the Association's second annual conference: President, F. C. Lennox, general sales manager, Somerville Ltd.; 1st Vice-President, H. S. Romani, vice-president & director of purchases, Christie, Brown & Co., Ltd.; 2nd Vice-President, Lyle D. Richardson, general manager, Shipping Containers Ltd., Montreal, Quebec; Treasurer, F. C. Hayes, president, Container Statistics Ltd.; Director, C. C. Callowhill, manager of purchases, Canadian Div., American Can Co.; Director, M. H. McArthur, vice-president–sales, Hinde & Dauch Paper Co. of Canada Ltd.; Secretary, Charles R. Cornell; Past President, John P. Gledhill, president, Wonder Foils Ltd.

An essential part of *lower* package-production costs!

Walton CONTROLLED HUMIDIFICATION

Walton Humidifiers increase accuracy in package production — FOUR WAYS!

1. ELIMINATING CURLED PAPERBOARD STOCK
2. PREVENTING CRACKED SCORING
3. ELIMINATES STRIPPING DEFECTS
4. IMPROVING PRINTING REGISTER

Combat the high cost of package production by using *proven* controlled humidification!

Scientifically controlling the moisture content of the air in your packaging and printing plants conditions paperboard and paper for efficient production. Economical Walton Humidifiers protect your stocks from the production-slowing effects of humidity variations ... reduce rejects and speed package manufacture. Get all the money-saving facts on a low cost Walton installation, now!

← Send for the new booklet "HUMIDIFICATION FOR THE GRAPHIC ARTS AND PAPER CRAFTSMEN" — please address Dept. G-12

WALTON LABORATORIES • INC
IRVINGTON 11, NEW JERSEY
CHICAGO BRANCH OFFICE: 30 NO. LA SALLE STREET

SPECIALISTS IN INDUSTRIAL, COMMERCIAL AND RESIDENTIAL CONTROLLED HUMIDIFICATION

Weather Forecast:

PLASTIC PACKAGING FOLLOWED BY INCREASING SALES

While it's true that plastic packages do not provide a universal answer to all packaging problems, reports from all corners of the country tell how pleased retailers and customers are when a product and a plastic package are right for each other.

. . . but there's more to it than telling your purchasing agent: *Buy us some plastic packages.* You owe it to your product to "bone up" on the changing plastics scene.

Each month MODERN PLASTICS brings you the latest items of interest to everyone who uses plastics products in any form. Long a prime source for authoritative comment on *current* plastics developments, MODERN PLASTICS also give you *long term dividends* in the form of enlightening articles, surveys and reports on important phases of the industry.

The cost? Only $6 per year (12 issues) in the United States and Canada; other countries, $8. Don't miss another issue. Just write. We'll enter your subscription and bill you later.

MODERN PLASTICS

A Breskin Publication

575 Madison Avenue New York 22, N. Y.

New Kodak process

Eastman Kodak Co. has announced a new photographic process, Kodak Ektagraph Process, reported to enable silk screen operators to reproduce faithfully continuous tone effects.

This process can be used for the production of four-color work as well as one, two or three color printing. The first silver halide emulsion to free silk screen printing from its previously inherent limitation to block printing effects is used to coat Ektagraph film used in this process. A few suggested applications of this new process are: department store display signs, restaurant menus, merchandising displays, programs, metal decorating, plastics, rubber, packaging and special fabrics.

It is expected to prove of great value in quality short-run printing where halftone effects are preferable. A halftone or line positive with a new matrix film developed by Kodak to produce a stencil, which is reported to reproduce even the most delicate tonal gradations with high fidelity, are combined in this new process.

Production of silk screen stencils with the new process begins when the halftone positive is contact printed on the matrix film. The new film incorporates its own developing agent in its emulsion. In the process the film base is peeled away from the emulsion leaving a photographically faithful stencil on the screen. The usual silk screen operations are then followed. It is reported that in experiments conducted silk screen reproductions were produced and distributed within 45 minutes after the picture was first taken.

Building Mylar plant

The Du Pont Co. has announced that it will start construction early next year on a plant south of Circleville, Ohio, for the manufacture of "Mylar" polyester film, a new product which was developed and is being made on an experimental basis in the company's Yerkes Research Laboratory of Buffalo.

The plant is expected to go into production early in 1955 and will be operated by the company's Film Department.

In its transparent form, "Mylar" looks like cellophane. However, it is

not a substitute for cellophane, but an entirely new film product with unusual strength, heat resistance and insulating qualities that appear to make it suitable for a series of new industrial uses.

Suggested uses are electrical insulation, carton-strapping tapes, recording tape, packaging and plastic glazing. However, further research and development are required to discover all the potentialities of this new film.

Flexographic process

The Aniline Printing Committee of the Packaging Institute has elected to change the name, aniline printing, to "flexographic process." Alexander R. Bradie, vice president, Mosstype Corp., has been asked to head the publicity committee for the purpose of promoting the widespread use of the new name. Mr. Bradie defines flexographic printing as follows: "The flexographic process is a method of letter press printing which employs flexible rubber plates and fluid instant drying ink."

Decision to make this change was the result of a report given by John Gozza, chairman of the committee, showing that in the tabulation of ballots received the name flexographic process received twice as many votes as any other name submitted.

Printers, converters and suppliers, as well as all business and technical publications are to be notified and requested to use the new term. All future advertising will carry the new name.

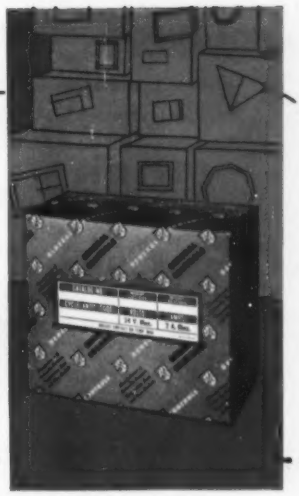
ENCYCLOPEDIA ERRATA: Attention is directed to the following errors in the 1953 MODERN PACKAGING ENCYCLOPEDIA:

The caption accompanying illustration No. 97, p. 119, erroneously describes the "Rainbow Trans-Leaf Coding Attachment," produced by Industrial Marking Equipment Co. Inc. The device illustrated is the company's "Whippet Marker."

In the article "Fibre Drums," on p. 584 in the second paragraph, the capacity of fibre drums is said to range from ⅝ gal. up to 15 gal. The correct range is from ⅝ gal. up to 75 gal.

Item 23, p. 95, gives the speed of a rotary capper manufactured by the Consolidated Packaging Machinery Corp. as "up to 125 per minute." The manufacturer advises that it will produce speeds up to 300 per minute.

You can eliminate topheavy package inventories with **Avery** Kum-Kleen *labels!*



a common problem... General Controls Co. of Glendale, California manufactures automatic controls for widely diversified applications. Warehousing formerly required segregation of more than 100 different boxes. Product changes, from time to time, would make certain preprinted box inventories obsolete.

solved with Kum-Kleen labels... Now box inventories are maintained by size alone—IN HALF THE ORIGINAL SPACE! A self-adhesive Kum-Kleen label identifies the contents of each box *as it is used.*
According to General Controls, "The unique characteristics of Kum-Kleen labels made this new packaging program possible, and they are saving us many thousands of dollars yearly." Their many Avery electric label dispensers "are proving themselves daily to be a most worthwhile investment as a time and labor saver."

how Kum-Kleen labels work... They're *pressure-sensitive*—LAID ON *fast* with a finger-touch—no moistening, no mess! They stay neat and attractive—won't dry out, pop, curl or peel. Patented Avery dispensers—manual or electric—feed die-cut, Kum-Kleen labels off roller tape for quick, clean labeling.

Where can YOU use these labels in YOUR business?

For case histories, samples and prices, please mail the coupon below.

Kum-Kleen *pressure-sensitive labels*

AVERY *producers of pressure-sensitive products since 1935*

AVERY ADHESIVE LABEL CORPORATION

117 Liberty St., New York 6 — 608 S. Dearborn St., Chicago 5
1616 So. California Ave., Monrovia — Offices in Other Principal Cities

☐ *Please send case histories, free samples.*
☐ *Have Avery label man call.*
Our business is _____

name _____
title _____
company _____
address _____

CLASSIFIED ADVERTISEMENTS

Modern Packaging reserves the right to accept, reject or censor classified copy.

EMPLOYMENT • BUSINESS OPPORTUNITIES • EQUIPMENT (used or resale only)

MACHINERY FOR SALE

FOR SALE: 1-Type A and 1-Type B Transwrap Machines; 2-Brightwood Box Machines, with collapsers; Std. Knapp Self-Adjusting Gluer Sealer & Comp. Unit; Pneumatic Scale Packaging Line, late type; Pneumatic Scale 4-head Capper; Capem 81F Capper; 7-Vacuum & Gravity Fillers, 8/8 fitted; Stokes & Colton Auto. Tube Fillers & Closers. Only a partial list. Send us your inquiries. Consolidated Products Co. Inc., 16-20 Park Row, N. Y. 38. BArclay 7-0600.

OVERSTOCKED—No Reasonable Offer Refused. International S. S. Straightline 160/min. Vacuum Filler. Resina Models S and LC Automatic Cappers. CROO New Way MB Wraparound Labeler. Stokes and Smith A Transwrap Filler, Capem E4F 4 head Rotary Capper. Island Equipment Styline Bottle Uncrambler. Stokes & Smith G1, G2, G6 and HG88 Auger Powder Fillers, Triangle Elec-Tri-Pak G2C, A6CA Fillers. Filler 4-Head S. S. Filler. Knapp 429 and Ceco Carton Closers. Pony ML and M Labelrites. Pneumatic Scale Auto. Cartoning Lines, 60 and 30 per min. Ceco, Redington and R. A. Jones Automatic Cartoning Units. Package Machinery Co. CA2, DF1, FA and FA4Q Wrappers. Hayssen 3-7 Miller, Scandia Mo del 88U1 Wrappers. Hudson Sharp Campbell Auto. Cellophane Wrapper. This Is Only a Partial List. Tell Us Your Requirements.
Union Standard Equipment Company
318-322 Lafayette Street
New York 12, N. Y.

1 CORLEY-MILLER CELLO WRAPPING MACHINE: Just overhauled by factory. Late model, perfect working condition. Priced to sell. Bernard Edward Co., 5252 S. Kolmar, Chicago 32, Illinois.

FOR SALE: Cass Emulsifier Homogenizer No. 5-107 5 gallon capacity, 3 h.p. 3 Phase A.C. 220. Equipment in excellent shape, in good running order. Price: $350.00 f.o.b. our plant, uncrated. Osborne Pure Foods, 12331 Edwin Court, Cleveland 12, Ohio. Tel. Cedar 1-6843.

1 MODEL "FF" PACKAGE MACHINERY CO. WRAPPING MACHINE: #13986, ¾ H.P. motor, electric eye, operating speed up to 100 units per minute. Excellent condition. Box 446, Modern Packaging.

HELP WANTED

WANTED: Paper manufacturer in Middle West, having cylinder machines, wants at once, man familiar with laminating to direct operations and also sell output of latest 60" laminating machine. Can paste board to board or paper to board. Excellent opportunity for right person. Box 442, Modern Packaging.

SALESMEN: We are converters and printers of cellophane, polyethylene, glassine and foil, in the form of bags, envelopes, rolls and sheets. No objection to carrying side-lines. In reply please state age, past experience, territories covered, etc. All replies kept strictly confidential. Box 443, Modern Packaging.

PACKAGING ENGINEER: Leading manufacturer in the drug and surgical dressings field has opening for a young man interested in the development of new packages. Work includes design of packages for sales appeal, protection and automatic production. Industrial design or engineering background helpful. Plant located within commuting distance of the New York Metropolitan area. Box 444, Modern Packaging.

BRANCH MANAGER: Newly built cellophane converting and printing plant in Los Angeles, Calif. Excellent opportunity. In reply state experience, qualifications and salary. Reply confidential. Box 445, Modern Packaging.

PACKAGING DEPT. MANAGER: A cost minded supervisor of diversified hand and machine food packaging operation, able to train help, institute labor saving methods and supervise constantly on the floor. Offered: A job with unlimited future in aggressive organization. Reply in confidence giving salaries earned. Box 460, Modern Packaging.

MANUFACTURERS' REPRESENTATIVE: We are one of the largest manufacturers of packaging machinery for both the Food and Dairy industries. We are creating a Mid-Western territory which will embrace Western Pennsylvania, Western New York, Eastern Ohio, and the State of West Virginia. Because of new developments in addition to our established lines, we find it impractical to cover this proven productive territory with our present sales organization. We are, therefore, seeking adequate representation with headquarters preferably in Pittsburgh, although this is not absolutely necessary. The man or company we want is presently engaged selling to the packaging field, either equipment or supplies. Reply to: Triangle Package Machinery Co., attention of Walter P. Muskat, 6633 W. Diversey Avenue, Chicago 35, Illinois.

REPRESENTATIVES WANTED: Expanding, well-rated converters and creative printers of polyethylene, cellophane, glassine, pliofilm, and foils, in sheets, roll stock or bags, has outstanding opportunity and excellent future for experienced representatives carrying non-competing packaging lines. Protected territories. Write in detail giving lines handled and territory now covered. Comm. basis. Utility Plastic Bag Co., Inc., 3805-09 So. Racine Ave., Chicago 9, Ill.

DEVELOPMENT ENGINEER: Manufacturer of thin films requires engineer familiar with food packaging materials and techniques to institute laboratory and pilot plant evaluations of product for customer printing and converting processes. Applicant must have engineering degree and preferably two to five years experience. Midwest location. Box 447, Modern Packaging.

SALES REPRESENTATIVE: Large Eastern converter of transparent films and paper specialties is seeking a representative for the Metropolitan New York area. Experience in flexible packaging is desirable. Give complete information as to experience, age and education. Replies will be held confidential. Box 451, Modern Packaging.

COLGATE-PALMOLIVE-PEET CO.: The opportunity to join our engineering staff is now open to men with the following qualifications. JOB ENGINEER: Graduate mechanical engineer with 8 to 10 years experience in design and development of automatic packaging machinery. DESIGN DRAFTSMEN: Experienced designer, graduate or non-graduate with background of 7 to 12 years in automatic machine design and equipment layout. JR. MECHANICAL ENGINEER: Young college graduate with 1 to 3 years experience in automatic machine design and development. Each is a career position with every opportunity for professional advancement. If you have experience and education in this field, send a complete resume to: Personnel Department, 105 Hudson St., Jersey City, N. J.

SALES REPRESENTATIVE: Packaging industry for Carton End Sealing Machine and Rotary Patch Lining Machine. Write Vernon H. Craggs, Inc., 330 North Charles St., Baltimore 1, Maryland.

WANTED: National food product manufacturer seeks packaging specialist capable of testing and evaluating purchased package material; research into improvements and new materials. Concerns mainly physical properties, but knowledge of printing and design valuable. Involves bags, cartons, corrugated containers, fibre cans, labels, etc. Prefer full time, but would consider retainer basis if could devote sufficient time effectively. Replies held confidential. Location Chicago. Box 453, Modern Packaging.

WANTED—A growing opportunity for the right man—30 to 45 years of age—with combination of estimating and sales experience in packaging field. This is an exceptional opportunity with a middle-sized Eastern concern. Give complete experience and salary expected. Your reply confidential. Box 454, Modern Packaging.

WANTED: Man with printing experience on aniline equipment. In replying outline your past experience. Replies will be kept strictly confidential. Box 457, Modern Packaging.

POLYETHYLENE BAG MAKING SUPERVISOR OR ASSISTANT FACTORY SUPERINTENDENT: Wanted by one of America's oldest and largest packaging companies to work in rapidly expanding department presently located in the midwest. An excellent opportunity for an alert, aggressive, experienced man. Mechanical and technical background preferred but not mandatory. Include all particulars concerning age, education, experience, present situation, health, etc. in first letter. Box 461, Modern Packaging.

WANTED: Salesman for folding boxes with aniline experience or salesman selling volume aniline printing. In replying outline your past experience. Replies will be kept strictly confidential. Box 458, Modern Packaging.

(Continued on page 214)

Sparkling Packaging *Sweetens* Candy Sales

Mouthwatering—that's the way candy should look! . . . that's the way it *always* looks in sparkling Crystal Tube packages! Crystal Tube's experience, modern methods and known reliability are the sales-making combination for putting eye-and-buy appeal in your candy products. To show your candy at its best—call Crystal Tube today for friendly assistance on your packaging needs. Our ideas and packaging know-how are always available.

CONVERTERS, PRINTERS AND DESIGNERS OF TRANSPARENT PACKAGING
C.T.C.
T. M. Reg.

CRYSTAL TUBE CORPORATION

6625 W. DIVERSEY AVE., CHICAGO 35, ILL.
Phone NAtional 2-4600

Branch Offices in New York, Philadelphia, St. Louis, Minneapolis, Detroit, Louisville, Milwaukee, Dallas and Los Angeles.

Cellophane Tubes, Pouches, Bags and Envelopes. Polyethylene Bags plain and printed. Also printed roll stock and sheets in Cellophane, Polyethylene, Acetate and Foil. Pliofilm. Utility Rolls, Holiday Bands and FLEXIBLE BARRIER MATERIALS

Better Aniline Printing
by incorporating shellac in your aniline inks

By formulating aniline printing inks with Mantrose Quality shellac you can obtain the following characteristics:

Better adhesion — Improves the retention of pigment by film, foil and paper. Increases scuff and scratch resistance.

Better gloss — Adds a pleasing soft lustre to printed areas.

Better coverage — Insures uniform appearance of large flat areas.

Better finish — Provides a hard, non-tacky, non-smearing surface when dry.

#65 refined extra white bleached shellac. For clear or transparent inks. Contains no wax.

Bone dry bleached white shellac. For best printing of heavy, even, opaque solids.

Mantrose maintains a complete laboratory to develop a shellac that meets your requirements.

SEND FOR SAMPLES. A sample of the above grades will be sent upon inquiry on your business letterhead.

The MANTROSE CORPORATION

Importers • Bleachers • Manufacturers
146 Forty-first Street
Brooklyn 32, N. Y.

Quality SHELLAC

CLASSIFIED ADVERTISING

(Continued from page 212)

SITUATION WANTED

PLASTICS PRINTING EXPERT: With industry-wide reputation seeks executive position. Highly specialized knowledge polyethylene printing techniques, including exclusive pretreating processes and ink formulae. Broad experience in setting up plants for silkscreen and rotogravure. Has impressive record in key management post. Energetic, personable. Five languages. Will bring full know-how to responsible position USA or Europe. Box 448, Modern Packaging.

MISCELLANEOUS

WANTED: Plastic Scrap—Cellulose Acetate and rigid vinyl sheet scrap in any quantity. Also Polystyrene, Acetate, Butyrate molded rejects, scrap and excess molding powder inventories. Box 441, Modern Packaging.

WANTED: Cameron Slitter, Packaging Line. Labeler, Capper, and Mixer. Box 440, Modern Packaging.

WANTED: Bag making machinery for polyethylene and central impression cylinder, aniline presses suitable for polyethylene printing. Please indicate complete specifications of units, capacity, age, condition and asking price. Box 462, Modern Packaging.

WANTED: Desire to purchase a carry-out patent or obtain license for manufacture of carry-outs. Box 456, Modern Packaging.

WANTED: Good used Automatic Simplex Cellophane Bag Making Machine (Heat Seal), either Crimp or Foldover Bottom Model. Write full particulars as to Model, Age and Price. Box 449, Modern Packaging.

WANTED TO PURCHASE: Miller Wrapping Machine to wrap boxes 10¾"x15"x1". Allied Embroidery Corp., 5620 Bergenline Ave., West New York, N. J.

Wanted: Aniline or rotogravure press, 2 to 4 colors—18" to 36" web, for cellophane or paper. Slitter, 24" to 36" width. Give full particulars. Box 459, Modern Packaging.

ALUMINUM FOIL AVAILABLE FOR IMMEDIATE SALE:
Surplus stock remaining from discontinued item. In A-1 condition. Can be printed. Excellent for protecting hygroscopic materials and food products.

Quantity	*Size*	*Stock*
14,867 lbs.	22⅝"	.0007
13,242 "	26⅝"	.0007
33,855 "	32⅝"	.0007
5,246 "	26¾"	.00035
16,668 "	32⅝"	.00035
22,618 lbs., (Laminated 32" miniforms)	22⅝"	.00035

Samples sent on request. Box 452, Modern Packaging.

WANTED: Direct representation folding carton manufacturer. Do you want top-notch representation in Detroit and vicinity? We can help you! Long experience and highly efficient sales staff calling on automobile and other manufacturers. Box 450, Modern Packaging.

FOR SALE: 2500 gross, 4 oz. flint Imperial Oblong, 24mm CT, Foster Forbes. 4000 gross, 2 oz. Opal, 58mm CT finish, 3 dozen class "A" reshipper, T. C. Wheaton. Contact us for samples and prices. Penn Bottle & Supply Co., 5619 Cherry St., Phila. 39, Penna., Granite 4-6967.

GRAVURE PRESS WANTED: Please give complete information including number of colors, width, number of cylinders, repeat length, make, condition, price. Box 455, Modern Packaging.

WANTED: Plastic scrap and rejects in any form. Cellulose Acetate, Butyrate, Polystyrene, Vinyl Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 439, Modern Packaging.

All classified advertisements payable in advance of publication

Up to 60 words.....$10.00	Up to 120 words.....$20.00	Up to 180 words.....$30.00
Up to 60 words (boxed).....$20.00	Up to 120 words (boxed).....$40.00	Up to 180 words (boxed).....$60.00

For further information address Classified Advertising department, Modern Packaging, 575 Madison Ave., N. Y. 22, N. Y.

Built for dependable service

POTDEVIN
STRIP GLUERS

★ Reduces Manufacturing Costs!
★ Speeds-up Production!
★ Improves Quality!

Automatically feeds, applies glue, dries and delivers to next station for further processing. Adjustable up to 21" wide.

There is a POTDEVIN for every coating job . . . from 6 inch label pasters to large 46 inch coating machines.

Write for complete literature

ESTABLISHED IN 1903 POTDEVIN
POTDEVIN MACHINE CO.
244 North St., Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling

These . . . AND MANY OTHER PRODUCTS CAN BE MARKED

ON THE
REJAFIX
THE MOST UNIVERSAL MARKING and PRINTING MACHINE

These machines will print on

glass ampuls	plastic bottles
folding cartons	stockings
electronic components	hacksaw blades
leather belts	wooden handles
toys	tin cans
abrasive wheels	shirt collars
etc.	etc.

and will also print and automatically cut paper or fabric labels.

HAND OPERATED FOR SMALL RUNS
AUTOMATIC MODELS FOR MASS PRODUCTION

POPPER & SONS, INC.
300 FOURTH AVENUE, NEW YORK 10, N. Y.

POLYETHYLENE WRAPS UP ANOTHER FIRST—

ANGEL FOOD MIX!

Water is all you add to Pillsbury's Angel Food Cake Mix. But just a trace of dampness in the package could spoil everything.

The ingredients of Angel Food Mix are so sensitive to air and moisture that a new package had to be developed before the mix could be marketed. A lamination of metal foil, plasticized glassine, and BAKELITE Polyethylene did the trick. Each component contributes a valuable feature:

The foil is a good moisture-vapor barrier. To protect the extremely hygroscopic flour, it must keep moisture pickup under .05 of a gram per 100 sq. in. in 24 hours. The glassine protects the foil outer surface against abrasion and carries the printed legend. BAKELITE Polyethylene, extruded to form the inner surface, enables the foil to be heat-sealed to a strong, airtight bond, making it practical for high-speed mechanical packaging.

Odorless and tasteless, BAKELITE Polyethylene does not affect the contents of the Angel Food Mix package. Colorless, it enhances the clean, bright appearance of the foil. Tough and flexible, it adds strength to the assembly, preventing excessive cracking and breaking.

The lamination is useful for packaging other foods—soup mixes, powdered milk, and powdered desserts, for instance. It's one example of many ways that BAKELITE Polyethylene is solving packaging production problems while enhancing sales. For further information, write Dept. ES-30.

Polyethylene-foil-glassine lamination by Shellmar Products Corp., Mount Vernon, Ohio.

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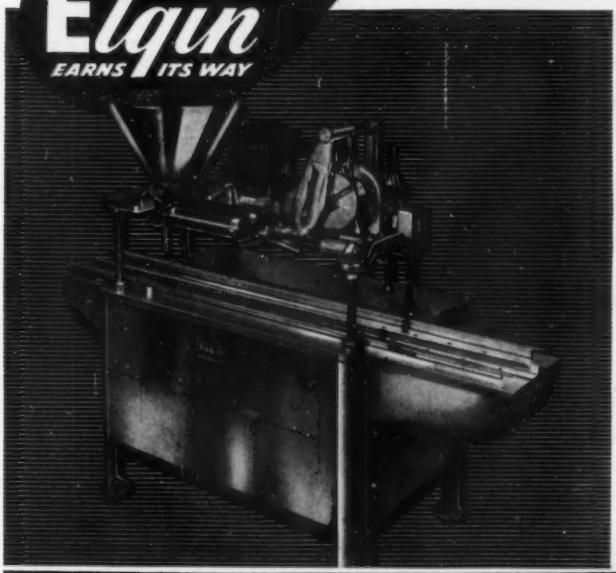

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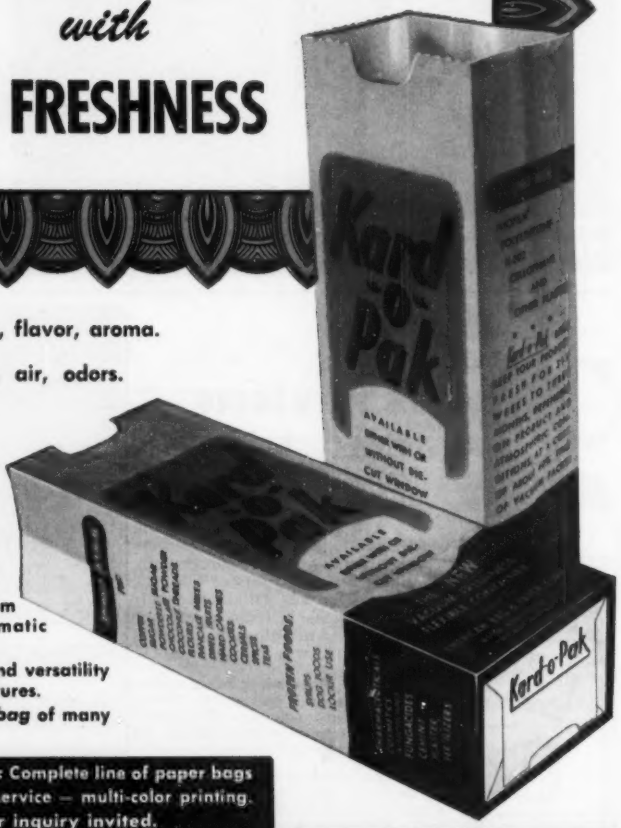

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